

## U.S. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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## MARS SCIENCE LABORATORY

## PREPROPOSAL CONFERENCE

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TUESDAY

MAY 4, 2004

+ + + + +

The Preproposal Conference met in the Executive Forum in the Fairmont Hotel, 2401 M Street, N.W., at 8:00 a.m., Michael Meyer, MSL Program Scientist, presiding.

## PRESENT

MICHAEL MEYER	MSL Program Scientist
SANDRA BEMBRY	SAIC, NASA Peer Review Services
JAMES B. GARVIN	Office of Space Science
WAYNE RICHIE	Headquarters
JEFF SIMMONDS	JPL

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## P R O C E E D I N G S

1 9:00 A.M.

2 MR. MEYER: It is 9 o'clock so why  
3 don't we go ahead and get started. What I'd like  
4 to do is kind of introduce what we're going to do  
5 today and introduce people involved, so the agenda,  
6 so if we could have the next slide.

7 The purpose of this meeting actually is  
8 to provide an interface to you so that you have the  
9 opportunity to understand what the AO is about, to  
10 ask questions, to clarify things. Essentially this  
11 is to help you so that we get better proposals for  
12 this competition.

13 So next let me introduce everybody. We  
14 have from Headquarters, we have Jim Garvin who's  
15 the Mars Program Scientist, right there; Michael  
16 New who is the Assistant or Deputy or Sidekick MSL  
17 Program Scientist. We have Jeff Simmonds who is  
18 the Payload Manager from JPL. And we have Wayne  
19 Richie sitting over in the far corner from Langley  
20 who's going to be running the TMC, the competition,  
21 the great organizer.

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1           So one of the things that everybody  
2 here should be aware of, but in case you haven't  
3 figured out, all of the material that's presented  
4 today is already on the web and the links are  
5 through the agenda itself.

6           So materials, if you didn't get a paper  
7 copy, you could look at the electronic copies.  
8 They're available and we'll keep them there.

9           We'll have a transcript of this meeting  
10 posted within two weeks and as we have been doing  
11 since the preliminary announcement of the AO,  
12 putting Frequently Asked Questions on the web as a  
13 help to clarify things that may not be particularly  
14 clear in the AO.

15           Next slide.

16           So here's the agenda. Essentially, the  
17 idea is that Jim will introduce the Mars  
18 Exploration Program and then we'll go through  
19 exactly what is MSL, what do we hope is the  
20 structure, what it will do and then we'll go  
21 through the evaluation process and what the science  
22 and the technical aspects of the evaluation. And

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1 then Sandra will talk a little bit about the  
2 logistics of getting the proposal, etcetera, in  
3 case there's any questions on that. And then we'll  
4 have questions and answers.

5 So one of the things to kind of help us  
6 keep on track is that if you have a question that's  
7 sort of a clarification, go ahead and ask it during  
8 the presentations, but if you have broader  
9 questions that may take some philosophical  
10 discussion or put us on the spot or whatever, if  
11 you save those until the end, I think it might be a  
12 little bit easier to manage those.

13 We have a recorder in the back so that  
14 the transcript of not only what was said, but also  
15 the questions and answers, will be available. For  
16 instance, when you ask a question, it would be  
17 great if you spoke loudly so the whole room could  
18 hear you. And I'll try to or whoever is up here  
19 will try to repeat the question so that we  
20 accurately reflect what was asked and what answer  
21 it may have been.

22 So with that, why don't we start with

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1       you, Jim, and tell us about the Mars Program.

2               So if we switch to Jim Garvin's slides.

3               MR. GARVIN:     Okay, thank you, folks.  
4       Well, I'm here representing the program.   Orlando  
5       and I are really gratified to see you all with this  
6       mission.

7               I thought I'd begin with a little bit  
8       of historical context about the program and where  
9       MSL has been.    I think it's interesting as you  
10      think about proposing instruments to this because  
11      we've come a long way and we're in a time that  
12      offers us a different context than we were four  
13      years ago when this mission as invented.

14              And so there's really three points you  
15      should realize.   Number one, our Mars Exploration  
16      Program which is a science-based program, the S  
17      word is legal there, is -- forgive the attempt at  
18      humor -- is all about exploring Mars in the context  
19      of the solar system like the rest of our programs  
20      in Code S,   Mars being here.   That fits into the  
21      President's vision, very fortunately.   It also  
22      gives us the ability to extend beyond what our

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1 original scope was in the Mars program as we look  
2 beyond.

3 Next slide.

4 So let me remind where we were four  
5 years ago as we develop this new program with the  
6 help of many of you.

7 Yes? Okay, people on the telecon who  
8 may not have heard me, the first slide was just  
9 opening remarks, so I would frame the context. And  
10 I'm giving a one-minute anecdotal story here.  
11 Second slide shows Mars, a complex planet. It's my  
12 second slide.

13 I want to remind you that four years  
14 ago we had a Mars program in disarray. Many good  
15 science investigation priorities, many of them  
16 unrealized, left over from the era of Viking that  
17 some of us started our careers on Mars with. And  
18 this particular slide, for those of you on the  
19 telecon, if you can't see it, just imagine it.  
20 This slide just shows the tremendous wealth of  
21 diversity Mars has presented us with all the way --  
22 back from the time of Viking some 28 years ago to

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1 the present. And it's a planet of great  
2 complexity.

3 We realize, as we're seeing today, with  
4 the Mars Exploration Rovers that conducting the  
5 right kind of experiments on the surface, in the  
6 right places, is vital to our understanding,  
7 particularly of questions with respect to the  
8 potential of their being habitats or even life-  
9 bearing systems or life-preserving systems on Mars.

10 So Mars is a busy place and we're very fortunate  
11 to have five spacecraft exploring it today.

12 Next slide, please. And as of today,  
13 it's interesting to reflect on the context having  
14 changed. Four years ago, we built the Mars Science  
15 Laboratory concept into the program with the help,  
16 of course, of the science community and others to  
17 enable the first what Ken Neilsen has called life  
18 inference experiments on the surface in a place  
19 targeted from a wealth of orbital reconnaissance  
20 with the hope of being able to identify places  
21 where we can actually ask questions about the  
22 history and the preservation potential of the kinds

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1 of things that here on earth are quite conducive to  
2 preserving life, water-lain sediments being one  
3 example.

4 And it's interesting to note that today  
5 we have our first glimmers of results from the  
6 antecedents of that exploration from the Mars  
7 Exploration Rover opportunity which has shown us  
8 that evidence that Mars does offer windows into  
9 what may be water-lain sediments of some  
10 potentially even widespread nature.

11 So MSL four years ago was the bridging  
12 mission or we called it the gateway mission to  
13 allow us to go explore rocks like you see here,  
14 potentially, at the Meridiana site on Mars where  
15 opportunity is with the kinds of analytical  
16 experimentation that we haven't even considered  
17 flying since Viking. And so the context message is  
18 that we're going back to the future here  
19 scientifically to improve upon what we tried to do  
20 28 years ago with Viking through the mirror of the  
21 window of remote sensing done by the Rovers and our  
22 on-going orbital assets.

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1                   Next slide.

2                   So let me give you the one minute  
3           thumbnail of the program and its importance.  
4           Orlando and I want you all to understand, thanks in  
5           part to you, that we actually have a program. This  
6           is not a one-time new start, let's do a mission to  
7           Mars. This is a program and there are many  
8           keystone elements. Today, we have the five  
9           vehicles exploring Mars as part of a program. And  
10          our next step, the Mars Reconnaissance Orbiter is  
11          vital, in fact, to the Mars Science Laboratory  
12          because we, the community, you all, all of us at  
13          NASA, sold this program on the idea that all of  
14          this, plus this, will target that. And then allow  
15          us to follow up on various pathways of scientific  
16          inquiry that will build upon all of this. And then  
17          we've also inserted now this competing mission on  
18          this -- Phoenix -- which is another element of this  
19          program.

20                  So what do we have here? We have the  
21          first glimmers of the history of ancient waters on  
22          Mars, from the Rovers in the context of the new

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1 findings mineralogically from Mars Express; the on-  
2 going work of a volatile elemental history of Mars  
3 from Odyssey, together with the continuing science  
4 from the Global Surveyor which we've extended to  
5 2006, added to that the five different dimensions  
6 of Mars will be explored with the Reconnaissance  
7 Orbiter. We hope that will put in place as a  
8 result of the payloads that you all propose, the  
9 right kind of targeting to put this vehicle and  
10 those payloads into the kind of place where we can  
11 ask questions about the potential habitats on Mars.

12  
13 And that's a big question. We've all  
14 heard it talked about by certain colleagues across  
15 the pond, but this is a very challenging question  
16 and I really want to urge you all to propose.

17 Next slide.

18 Now, there's three new elements or  
19 three future elements on the program in which MSL  
20 fits: obviously, MRO, the dramatically improved  
21 reconnaissance step we hope to use to target MSL;  
22 MSL itself, and I put a little word here, this is

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1 my speak for the way we originally sold this  
2 mission. The AO describes very explicitly what the  
3 science definition teams have asked us to do. But  
4 I think it's important to look at history sometimes  
5 as we talk about this mission.

6 Here is our first exploration with some  
7 type of definitive analysis of a potential habitat  
8 on Mars. We don't have that capability on the Mars  
9 Exploration Rovers, as much as they've made  
10 momentous discoveries. Neither did our friends in  
11 the United Kingdom with Beagle, have the potential  
12 to fully explore potential habitat. That's what  
13 we're asking MSL to do. That's what you're all  
14 here for.

15 It does give us the ability to look  
16 back in time and remember that we did attempt to  
17 explore what was an unknown potential something 28  
18 years ago with Viking. And we met with some  
19 challenge. So your job is to propose things that  
20 will not be challenged by the Mars that presents  
21 itself to us as we go to places that might be  
22 similar to Meridiana or it might be different.

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1 I might also add that the Mars Telesat  
2 orbiter, in 09, will also be competing later in  
3 the summer, early fall, a small science payload to  
4 add to the capability of our Mars program to look  
5 at potential habitats, to find where they might be  
6 and to monitor the Mars that exists around them  
7 today.

8 Next slide.

9 So I wanted to conclude then with the  
10 big picture of the Mars program as it unfolds ad  
11 nauseam. We have MSL right here as our first  
12 mission to explore a habitat. There's many  
13 measurement challenges with that. I, Orlando, Ed  
14 Weiler are hoping and Michael, both Michaels, are  
15 hoping your creativity will come up with new ways  
16 to look at the measurement questions we posed and  
17 list in the AO. This is -- we're not being  
18 prescriptive to the point where we don't want you  
19 think about how to do this in the context of all of  
20 this, what this will show us and help point us and  
21 with the idea there's a future.

22 MSL is very important because it really

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1 is the lever arm that directs us on these pathways  
2 that many members of the community contributed to  
3 as we responded to Congress. Two years ago,  
4 Congress told us you don't have this. You stop  
5 right here with this mission. Show us with all of  
6 this and this and now that, where you're going.  
7 And today, in the President's vision they have  
8 given us a sense of direction with people way out  
9 here somewhere, the women and men that get to go,  
10 lucky people. But they've given us a sense of  
11 direction that this mission will focus us and  
12 perhaps we will today take the path and search for  
13 ancient life as it might be preserved in types of  
14 rocks. At least that's for the moment. The Mars  
15 objective is built to be discovery responsive.

16 So my urging to you, as I conclude, is  
17 we have a big program. This is the first chance to  
18 put a whole new generation of instruments on the  
19 surface that have not been competed ever before for  
20 Mars or other places like this. And it's really  
21 key to getting on these pathways for the next  
22 decade. One of the possible pathways that we're

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1 very heavily interested in is having have MSL help  
2 us achieve the first robotics sample return on Mars  
3 which is also in the spirit of the President's  
4 vision.

5 So MSL, the gateway to the future, the  
6 first exploration of a habitat in the context of  
7 all of the foam in the water we've been doing.  
8 It's a big challenge. You all know what's ahead of  
9 you. I'm just here to give you the context of  
10 this. The ball is in your court and thanks so much  
11 for coming.

12 Scream, yell, holler, inquire, whatever  
13 you seek to do, I'm here. So thank you all for  
14 coming, really. This is a great opportunity.

15 Michael?

16 MR. MEYER: If we can go back to the  
17 first slide set and page through about three slides  
18 should put us at the beginning of -- was it split  
19 up? If you page through this let's see how far it  
20 goes. Okay, it is the other slide set.

21 Let's do Jeff Simmonds. Sorry. I  
22 haven't looked at the agenda since yesterday.

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1           Next we'll hear from Jeff to tell us  
2 about the mission itself.

3           MR. SIMMONDS: I am going to start off  
4 on the discussion topic slide. I want to go  
5 through quickly the mission overview piece. All of  
6 this material is in the -- both in the AO and the  
7 PIP, various pieces. We'll talk about where you  
8 find the various bits of documentation. There's a  
9 lot of it and there's a lot of ties in the  
10 relationships back and forth that I want to go  
11 through. And then finally, a few notes on what  
12 we're asking you to put in the proposals and a bit  
13 on why we're asking for various formats and things  
14 like that.

15           Next slide, please. We're on number 3,  
16 4, go ahead.

17           Next. The overall mission objectives,  
18 I've just picked them up from, directly from the AO  
19 here. Jim said it very well. We're going after an  
20 assessment of habitat or habitable environment.  
21 The payload that we envision will break up into the  
22 four major elements and these are segregated

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1 primarily by where they'll be located on the  
2 surface system vehicle. The analytical laboratory  
3 investigations at the core of the process will be  
4 in the payload module that we'll show you in a  
5 minute. Remote sensing investigations, mass  
6 mounted remote sensing primarily, up on top of an  
7 articulated mast, serving both the purpose of  
8 telling us where we're going, letting us know where  
9 we're going to sample, as well as doing their own  
10 remote sensing science.

11 Contact instrument investigations, out  
12 on a manipulation arm system to do again sample  
13 triage to help us select the samples that we're  
14 actually going to take into the analytical lab for  
15 analysis as well as doing independent science.

16 And then Category 4 is best described  
17 as "other." It's other investigations mounted  
18 elsewhere on the Rover than on the mast, the  
19 contact arm or in the payload analytical  
20 instruments laboratory.

21 Next slide, please.

22 NASA has also made --- let me back up

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1 one quickly. We also mentioned as part of number 4  
2 down here, we're soliciting a sensor to assess the  
3 radiation environment at the local Martian surface.

4 When we talk about mass allocations and so forth,  
5 you'll notice that this investigation has a  
6 separate one kilogram mass allocation that's sub-  
7 allocated to it and it's -- I think Michael is  
8 going to talk more about the description of how  
9 that's to be done.

10 Let's go ahead now. NASA has also  
11 agreed to fly two contributed instrument systems,  
12 the first of which is a hydrogen content active  
13 neutron spectrometer to be supplied by the Russian  
14 Space Agency. The second is a meteorological  
15 station set of sensors to be supplied by the  
16 Ministry of Science and Technology from Spain.

17 We've received already several  
18 questions as to what these instruments will do,  
19 what the nature of the investigations are and we're  
20 assembling information packages on both of them  
21 that will be put out on the website within the next  
22 week or two. The one on the neutron spectrometer

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1 is almost ready to go and we're working on putting  
2 the meteorology station information together and  
3 we'll get that out to you just as soon as we have  
4 it together and available.

5 Next one, please.

6 A few words on project status. I want  
7 to remind you that MSL is in Phase A, formulation  
8 stage. We don't have all the answers. We're not  
9 fully designed yet. We can't give you all the  
10 answers to all the detailed questions that I know  
11 you will have as you go through, but we've got to  
12 have something to do for the next six years. Five.

13 Thank you, Jim.

14 Yes, we have to launch too.

15 We do have a lot of areas in the  
16 project that are undergoing active trade studies.  
17 But the message to you all today is that the basic  
18 payload interfaces and the accommodations resources  
19 that are in the AO and the PIP have been baselined.

20 We're, in essence, working around those in terms  
21 of building the rest of the vehicle and mission  
22 system. In truth, this mission is being built

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1 around the science, not the other way around.

2           Your proposals are to assume the  
3 baseline presented in the AO and the PIP. Any of  
4 the subsequent decisions we make about the system  
5 will be dealt with after we select instruments, but  
6 again, our intention is to maintain the  
7 accommodations and the resources that have been  
8 defined now in the AO and PIP throughout the  
9 process so that once you're selected you're still  
10 going to have what you proposed to use. Things  
11 like the absolute size of the Rover, the details of  
12 the mobility system, the size and shape of the  
13 wheels, the number of wheels, things like that, may  
14 change.

15           The specifics on the arms, the detailed  
16 sample acquisition and delivery methods may change.

17           And in fact, to some extent we are waiting until  
18 we know what the real payload and the real science  
19 is going to be so that we finish the details of  
20 those systems to support the science that's been  
21 selected. We don't want to drive your science by  
22 what we've done up front.

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1           And of course, the latitude range and  
2           the altitude landing site and so forth has yet to  
3           be selected and the PSG is going to be a large part  
4           of that process.

5           Next slide.

6           This is an overall schedule and it  
7           probably isn't readable. In the handouts, you'll  
8           see though that the payload line down here, about a  
9           third of the way down, represents the major  
10          milestones that are given in the AO and PIP and  
11          feeding ultimately the flight model deliveries that  
12          come down into the ATLO line.

13          The ATLO phasing is set up much -- very  
14          much driven by the architecture of the flight  
15          system in that the Rover gets nestled into the  
16          descent system which gets nestled into the entry  
17          system and the order of integration and hence the  
18          order of delivery is all driven by that integration  
19          sequence and we'll show that again in a minute. So  
20          we come in in the AO time frame with our  
21          instruments.

22          Let me remind you, this schedule is

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1 just a reference schedule. The key milestone dates  
2 that you're to be assuming in your proposals are  
3 all given in the AO and PIP and if there is  
4 conflict between where any of these things are  
5 lining up and what's in the AO and PIP, use the AO  
6 and PIP. That's a common message throughout my  
7 presentation and all of ours.

8 Next one, please. We're on number 8  
9 for the folks on the telecon.

10 The overall mission architecture should  
11 be familiar: launch, 10 to 12-month cruise phase,  
12 followed by entry, descent and landing that's Dr.  
13 Weiler's favorite six minutes from hell.

14 (Laughter.)

15 The surface mission follows the  
16 terminal descent phase. MSL is going to be a  
17 larger Rover than MER. Just how much larger, we're  
18 working on, but driven primarily by four main  
19 characteristics. We're doing a longer prime  
20 mission where we've got more mobility. We've got a  
21 lot more payload and payload support functions on  
22 this vehicle. And at present, we're assuming a

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1 radioisotope power source. The text got cut off  
2 there, I apologize, but that last phrase says  
3 "pending final decisions" and that's the whole  
4 legal process associated with NEPA and the final  
5 confirmation that, in fact, we will be nuclear, has  
6 yet to be made.

7           So what we've included in the AO and  
8 PIP is a description of the RPS-based system  
9 because as far as resources and lifetime and so  
10 forth, that one is the most challenging case. It  
11 also, obviously, includes the induced radiation  
12 environment from the RPSs that you need to consider  
13 in instrument design and so forth. That's the  
14 baseline that we've assumed now for the PIP and it  
15 ultimately will be decided one way or the other  
16 through the rest of the process.

17           Next slide, please, number 9.

18           Here's the Russian doll scenario where  
19 we take the Rover, couple it with the descent stage  
20 to build the descent system, embed it then in the  
21 back shell, the parachute module system and the  
22 entry aero shell or heat shield to form the entry

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1 system. And then through the cruise phase to Mars,  
2 we have this ring-shaped cruise stage attached to  
3 the back.

4 The next slide shows the launch and  
5 cruise configuration in a little more detail.

6 Next, please.

7 Once we've gotten rid of the cruise  
8 stage, turned over for EDL, we're in this  
9 configuration. The descent stage, up above, with  
10 the surface vehicle system tucked inside the shell.

11 Next.

12 On slide 12, the EDL time line is shown  
13 where we come into the power descent phase. I  
14 think a lot of you have heard about the skycrane  
15 phase where we literally come down with the descent  
16 stage, come to a hover at about five meters off the  
17 surface and then deploy the surface vehicle down on  
18 its mobility system to the surface using a system  
19 that's very similar to what was used for Pathfinder  
20 and MER in terms of deploying for those systems the  
21 airbag system down off of the descent stage before  
22 it was released. Here, we just lower it gently on

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1 to the surface, he says, as though it were a simple  
2 problem.

3 (Laughter.)

4 But then I'm only payload. I'm not the  
5 guy who has to do that. We have a lot better  
6 engineers doing that.

7 Next.

8 The Rover configuration, once we're on  
9 the surface, is shown in this slide. We're on  
10 number 13. The payload module out in front is  
11 shown kind of ghosted in this view because for  
12 right now it's primarily a volume allocation and a  
13 space mass allocation. You all will define what  
14 really goes there. What we've attempted to do is  
15 define adequate resources that we should be able to  
16 accommodate what you all can afford to put there.

17 We show the manipulation system, the  
18 arm or arms with the contact instruments out in  
19 front. The articulated mast. This one is shown  
20 with an elbow joint in the middle probably taller  
21 than it will end up being in the final version.  
22 The height range is given in the AO as putting

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1       these mast-mounted instruments somewhere between  
2       one and two meters off the deck of the Rover, so  
3       that will put them up approximately two meters off  
4       of the surface or more.

5               We will endeavor to stow that arm so  
6       that the instruments up on top of the mast end up  
7       as far away from the RTG during cruise phase as we  
8       can so as to minimize that radiation environment  
9       that we have to live through on the way to Mars.

10              The body-mounted instruments, the  
11       neutron spectrometer, the meteorology experiment,  
12       as well as the radiation sensors and the other  
13       engineering cameras will be located elsewhere in  
14       the body of the Rover. They're not part of the  
15       payload module allocation either for mass or  
16       volume. There have been some questions on that,  
17       but those contributed instruments as well as the  
18       engineering system sensor, the HazCams and the  
19       NavCams, are separate from and distinct from that  
20       48 kilograms of mass that's allocated to AO  
21       solicited science instruments.

22              And then finally, the sample processing

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1 and distribution system which takes samples that  
2 are acquired from the surface via the manipulation  
3 system, deliver them then to the inlets of the  
4 analytical instruments in the payload module.

5 Next slide, number 14. Go ahead.

6 We'll talk a little bit about the  
7 available documentation. Precedence. The AO is  
8 the primary guidance and takes precedence over all  
9 other documents in case of conflict, in case of  
10 inconsistencies. The AO is the guiding document.  
11 If you do find inconsistencies between it and any  
12 other document and so forth, let us know. Help us  
13 help you. We'd like to understand if there are  
14 inconsistencies that you find, let us know. We'll  
15 try to resolve them and make sure that we've got it  
16 right in the AO.

17 Secondly is the PIP. There's a lot of  
18 detail about the mission system. There are also a  
19 lot of areas where we clarify the nature of the  
20 response we'd like to get from you, specific  
21 details, contents of the response that are referred  
22 to, in general, from the AO. So it contains a lot

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1 of shoulds and clarification in terms of what needs  
2 to be in your proposals. And again, we've tried to  
3 keep things consistent, but we've been a small  
4 team. You've got a lot more eyes on this thing  
5 than we ever will have and we do want to get it  
6 right.

7 We do not intend to have asked any  
8 trick questions. It should all be straight forward  
9 and it should all be stated in the AO and PIP.

10 Some of the reference documents may  
11 have what appear to be requirements in them. If  
12 they are not referenced by the AO and PIP, let us  
13 know. Everything should trace down to a general  
14 statement of what's required out of the AO,  
15 elaboration and more detail in the PIP and then  
16 other documents are referenced and pointed to,  
17 sometimes by active links directly out of the PIP.

18 But there should not be any buried requirements  
19 that aren't referenced somewhere above in terms of  
20 what you need to put in your proposals.

21 Again, let us know and we'll try to  
22 clarify or correct any of those inconsistencies

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1       that you might find.

2               Next.

3               By now you've all found the Acquisition  
4       Program home page, if for no other reason, the  
5       preproposal conference information was there. The  
6       website address is up on top again. The next chart  
7       points at where you can download the AO if you  
8       haven't already done so. By clicking that link,  
9       next chart, it takes you through a couple of  
10      different pages on the NASA OSS site, but it  
11      ultimately gets you to some links where you can  
12      download the AO itself either in HTML, PDF or a  
13      Microsoft Word format.

14              Next slide.

15              The MSL Library link is the next  
16      important one you need to follow and it's got all  
17      of the reference documents including the PIP on it.

18              Next one, please.

19              And I don't know what the counter says,  
20      it says "now", but when I put the slides together  
21      we had just something slightly over 9,000 hits on  
22      the home page so far, since the middle of October.

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1           At the top of the Library has a set of  
2 updates. Any time we put anything new or change or  
3 correct anything within the Library, we'll put a  
4 note up here as to what it was that was changed.  
5 So you won't have to go chasing and find it for  
6 yourself. The next five sections in the Library  
7 include top level, Office of Space Science, Policy  
8 documents and Space Science Strategy document, for  
9 example. The next one down is Mars Exploration  
10 Program documents, documents out of MEPEG, for  
11 example, and program description stuff.

12           The third set are the MSL project  
13 specific guidelines and requirements documents that  
14 we refer to out of the AO and PIP, including the  
15 link to the PIP itself where you can download the  
16 PIP. The rest of these documents are called out by  
17 the PIP in various places. When you download the  
18 PIP, next chart, and next one, please, you'll find  
19 that in a lot of places there are live links in the  
20 PIP document. Where we're expecting you to go to  
21 another document, we've attempted to put a live  
22 link in the PIP document. Some of those are

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1 duplicated by the top level document links that are  
2 up on the Library page.

3 So for the most part where you -- if  
4 you go through the PIP and find where we expect you  
5 to go back and use those reference documents, they  
6 are linked and they should be live links.

7 Next one, please.

8 The last two sections of the Library  
9 are other NASA reference documents including some  
10 of the COSPAR planetary protection program  
11 description documents as well as some of the more  
12 procurement-related NASA regs and directives just  
13 for reference.

14 Next one, please.

15 We will also use the acquisition home  
16 page as the location for posting all of the  
17 Frequently Asked Questions, the questions that we  
18 receive from you and then turn around and then  
19 republish to the community, so check back there on  
20 occasion.

21 And if we find errors in the PIP, we  
22 will keep an errata list current down in the PIP

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1 site where we will keep an errata list as well as  
2 publishing changed pages to the document so that  
3 you won't have to go back and re-download all 128  
4 plus glorious pages of information there.

5 Becky Heninger on the project team has  
6 done a really excellent job of pulling a lot of  
7 information together and working really hard to  
8 keep it consistent for you. I don't expect many  
9 change pages and many errors, but there may be a  
10 few.

11 Next.

12 A couple of notes of proposal content  
13 before I close. The material asked for in the  
14 proposal serves multiple purposes, both science  
15 evaluation, technical management cost, other  
16 factors, formal, TMC0 evaluation. Those are the  
17 primary pieces of the proposals and the evaluation  
18 process.

19 Secondly, we ask for some materials  
20 that provide a basis for the project accommodation  
21 assessment that's done to support Michael's  
22 recommendations back to the selection authority, as

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1 well as for you lucky winners, some information --  
2 did I shock somebody?

3 (Laughter.)

4 Some information that will help us get  
5 you on contract quickly. Cost formats, for  
6 example, are asked for for the life of the project  
7 and by phase, primarily to support the science and  
8 TMCO process. We ask for a detailed set of cost  
9 information and some statement of work information  
10 and so forth over the first four months of  
11 activity, specifically to help us put in the  
12 initial contracts in place to get money to you  
13 quickly, as soon as we can after selection. So it  
14 appears like it's duplicative, but it's really not  
15 and it does serve several purposes.

16 Similarly, the design descriptions and  
17 so forth that are used in the formal evaluation  
18 process are separate and distinct from the  
19 accommodation summary information that gets, that  
20 feeds back into the accommodation assessment.

21 Having said that, everything in the  
22 proposal is available to all of the evaluation

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1 processes, so the science and TMC0 panels may  
2 choose to look at any of these other sources of  
3 information in there and I think Wayne will have  
4 some other words about what gets used where.

5 My last slide is just a reminder on the  
6 process. Other than the questions you ask today  
7 that we answer here, if you have questions or you  
8 find inconsistencies, Michael Meyer is the  
9 appointed recipient of all those questions. He  
10 will then disseminate those to those of us on the  
11 AO team. We go through them, make sure we come up  
12 with a good consensus answer and then post those  
13 back to the Frequently Asked Questions page on the  
14 website on a regular basis.

15 We do keep those questions generic in  
16 terms of the way they're posted out to the rest of  
17 the community and we protect the innocent by not  
18 giving out the identity of the questioner. But all  
19 of the questions and all of the answers are made  
20 available to the entire community so that it will  
21 keep the playing field level.

22 Just a last note, any of you who and

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1       this is an advertisement for submitting notices of  
2       intent, if you submit a notice of intent, via the  
3       process that Sandra will describe later on, any  
4       changes in the website that get made, you'll be  
5       notified of those via an e-mail. So that's your --  
6       that will be the primary notice for changes.

7               That's all I have. If there are any  
8       quick questions, I can take them, otherwise, I will  
9       pass it back to Mike to do the Science Objectives  
10      piece.

11             QUESTION:     What should we expect in  
12      terms of time on the questions?

13             MR. SIMMONDS:     Our goal is a week.  
14      Normally, we have a telecon on Tuesday mornings to  
15      go through questions that we've worked back and  
16      forth amongst us via e-mail. Depending on the  
17      questions, we may get that done quickly or it may  
18      take us a little more time. But generally, within  
19      a week would certainly be our goal.

20             MR. MEYER:     There are a few questions  
21      that we may get that actually end up being policy  
22      questions for the Mars program and in those cases

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1 it may take a little bit longer to go at it and run  
2 it up the chain and make sure that we're not  
3 stepping in something that we regret later.

4 So let's go to the science evaluation.

5 One of the things that I want to convey to you is  
6 that we have a process for evaluating the proposals  
7 that we think is fair and it's not the throw them  
8 down the stairs and see which ones land where, but  
9 in fact, we try to have some intelligence put into  
10 the process.

11 So one of the things just to make sure  
12 that we're kind of on board and aren't doing  
13 something out of the ordinary compared to what  
14 everybody else is doing in space science, we  
15 actually came up with a plan and presented it to  
16 Dave Bohlin and Orlando as a this is how we're  
17 going to go about doing this, what do you think?  
18 Any ideas? Do you like this? They both have  
19 signed up to it. They think it's a good process.  
20 So essentially, we've already had a mechanism for  
21 vetting the review process.

22 Next slide.

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1           So this is a nice complicated road map  
2 box structure for how we're going to go about  
3 deciding what instruments are going to be able to  
4 go on the Mars Science Laboratory. So part of this  
5 you already have benefitted from or experienced and  
6 essentially we're here at the pre-proposal  
7 conference and notices of intent are due in 10  
8 days.

9           With that, with the notices of intent,  
10 we will start getting together our panel so that we  
11 have people locked up so they don't go on vacation  
12 or something like that when we need them to review  
13 the whole thing, go through proposals, the  
14 compliance check to decide, make sure that we're  
15 reviewing -- we're not wasting our time on some  
16 proposals.

17           Now in this process here, the  
18 evaluation process, is set off as a box because  
19 this is the independent part of the process. This  
20 is where the science merit, the relevancy, the  
21 feasibility and the technical, management and costs  
22 of the proposals are reviewed by independent teams

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1       that are brought into, locked in a room until they  
2       come up with some cogent answers.

3               So this is the process by which  
4       basically we collect information on whether or not  
5       proposal A is great scientifically and actually  
6       doable. That's sort of the bottom line. Out of  
7       that process we have what's called a categorization  
8       committee. Essentially what this is is civil  
9       servants are asked to look at the evaluation of  
10      these proposals and come up with categorization.

11             When I first got to NASA, this whole  
12      categorization process struck me as an obscure way  
13      to take good data and turn it into four categories.

14      I had no idea why anybody would want to go through  
15      that process. Well, as I've learned, it ends up  
16      being extremely useful. And what it does, one, it  
17      vets out the proposals that just are nonstarters.  
18      You end up with category 4, which says I'm sorry,  
19      it doesn't matter if you had infinite amount of  
20      money, this is not worth spending money on. It's  
21      not quite that harsh, but --

22                       (Laughter.)

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1           Category 3 is: this is great, but  
2           technologically it's not there yet and by the way  
3           if you have extra money you might even want to put  
4           money into this so that next opportunity this  
5           instrument would be ready and be able to go on a  
6           mission.

7           Category 1 and 2, basically Category 1  
8           says this is great, this is doing wonderful  
9           science, this should go on the mission. Category 2  
10          says this is great, but it's not as high a priority  
11          as a Category 1 mission. It's not priority as in -  
12          - it shouldn't displace a Category 1 instrument  
13          that's doing a similar thing. So in other words,  
14          if you have two wonderful spectrometers and one is  
15          more wonderful than the other, one would be  
16          Category 1 and the other would be Category 2 and  
17          essentially, you don't do the Category 2 unless  
18          there's a good reason why you're not going to do  
19          the Category 1 instrument.

20          So this whole process basically  
21          organizes the information from the independent  
22          panels and puts the instruments into different bins

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1       that now you can start doing sort of a mix and  
2       match. How do you put the instruments together so  
3       that you have a mission? So part of that process  
4       is one, we have an accommodation study to find out  
5       well, this instrument may be using too much power,  
6       but if you put this one in you can't use this  
7       instrument. So this is going to be a real jigsaw  
8       puzzle that will be fun to work with over a couple  
9       of weeks to figure out how that all fits together.

10

11               And basically, the idea is through  
12       accommodation and other things that may have  
13       happened in the meantime, coming up with a  
14       recommendation or a couple of recommendations on  
15       scenarios of if we want to go do this, this is the  
16       path, this is the instrument suite that we want to  
17       use or if we want to go that way, here's what we  
18       want to do; if we only have half as much money,  
19       this is what we should do. So in other words, out  
20       of this whole process, we have the information on  
21       the proposals, we have the categorization on  
22       whether or not they're well worth doing or not,

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1       whether or not they'll fit on to the Rover and  
2       whether or not they'll play well together. And  
3       then a recommendation of several different types  
4       will be developed. Okay.

5               So at this point in time, one would  
6       think okay, we're done. But what happens is, and  
7       this is an important process, is that that  
8       information goes to the Space Science Steering  
9       Committee and what they do is they look at the  
10      process and make sure one, that the process is  
11      fair; two, that the results coming out of this  
12      whole thing are actually consistent, so there  
13      doesn't seem to be well, wait a second, you said  
14      the same nice words about this instrument, but it  
15      got a different categorization, what's the story?  
16      What's going on?

17             So essentially, they go through the  
18      whole thing and make sure that something wasn't  
19      dropped or maybe forgotten, essentially just to  
20      make sure that this process has been fair and  
21      consistent.

22             So with that, there's -- there will be

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1     some recommendations about how the language here  
2     may need to be changed, you might want to look at  
3     this again and with that, prepare a briefing  
4     package in which this material is presented to Ed  
5     Weiler and asked okay, here's what we decided to  
6     do,     here's     a     recommendation     or     here's  
7     recommendation A, B or C, depending upon what you'd  
8     like to do and out of that comes the selection of  
9     the instruments.     And hopefully, pretty quickly  
10    after that, we'll be able to tell people and get  
11    people on contract.

12                 So that's the process that will be  
13    happening over the next several months and the  
14    whole purpose is to get the instruments for MSL so  
15    we can actually start working on them and doing a  
16    real mission.     And to get the best combination of  
17    instruments so that MSL can meet its objectives.

18                 Next slide.

19                 So let's see.     Now I think I've said  
20    everything and in the next couple of slides I'll  
21    look at them to make sure we didn't forget  
22    anything.

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1           So there's two independent panels, one,  
2       the Science Panel that looks at the merit and the  
3       feasibility and then there's also the Technical,  
4       Management and Cost Panel that looks at the risk,  
5       potential risks of the individual instruments to  
6       the mission or the suites.

7           Next.

8           Okay, let's see, I have to step back so  
9       I can read this.    Okay, we did categorization,  
10      accommodation, talked about the steering group  
11      committee. I think I covered everything.

12          So now I'm on Slide 4, next slide.

13          Okay, one of the things that many of  
14      you are well aware of, there are some contributed  
15      instruments, essentially these are instruments  
16      provided by a foreign nation that are no cost to  
17      us.    Some accommodation, that sort of thing. And  
18      essentially, it is our job, actually the project's  
19      job to look at these instruments and determine  
20      whether or not they'll actually be delivered on  
21      time and whether or not they'll be able to do the  
22      testing and calibration, validation, the lot.

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1           So there will be an independent review  
2 of these instruments to make sure that they're  
3 viable. And the reason why we do this is that we  
4 can get an instrument for no exchange of funds and  
5 also it provides some opportunities for access of  
6 U.S. scientists to missions, not only as  
7 participating scientists or independent scientists  
8 or facility scientists on these particular  
9 instruments, but many times it will also bode well  
10 for future collaboration in which U.S. scientists  
11 can participate in somebody else's mission like a  
12 ESA mission and that sort of thing.

13           Okay, and I said that these are  
14 opportunities -- there will be opportunities for  
15 individual scientists themselves to be involved  
16 with these contributed instruments.

17           Next slide.

18           Okay, now an important point. There is  
19 a hierarchy to this whole process in terms of what  
20 do you believe. The AO is your bible. What the AO  
21 says, that's the rules of the game. That's what  
22 you're competing against. This is what the

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1 referee's use whenever there's a controversy over  
2 whether or not a proposal is proposing the right  
3 thing or the wrong thing. The AO is brought out  
4 and used as well, we actually said right here. So  
5 this has the rules of the game. The idea is, the  
6 reason why we do this is, so everybody has the same  
7 rules to follow, so it's a fair process.

8 We're all human and we don't think of  
9 everything and we make mistakes, so we use the  
10 Frequently Asked Questions to help clarify what's  
11 in the AO of what we really intended for something  
12 to do or oh, we didn't think of that, good point,  
13 and yes, that is also considered. Whatever it is,  
14 we use the Frequently Asked Questions to basically  
15 modify the rules of the game so that everybody  
16 knows what's going on. And so you should pay  
17 attention to those because some answers in the  
18 Frequently Asked Questions may actually pose  
19 something significant to a particular answer that  
20 you want to propose.

21 Next comes the appendices and then  
22 proposal information package.

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1                   Okay, next.

2                   Objectives. This is the science floor.

3       The concept here is that we're going to have a  
4 mission go to Mars and we want it to do certain  
5 things. Now what does it have to do to still be a  
6 viable mission? In other words, if we go through  
7 this whole process and we don't have the  
8 instruments that can accomplish A, B and C, we're  
9 actually not going to have a mission. We're not  
10 going to meet the science floor. They'll say okay,  
11 wait a second, we're not going to learn what we  
12 hope to learn by sending this much money on the  
13 next mission. It's not going to happen.

14                  So essentially, from a programmatic  
15 viewpoint, this is something to pay attention to,  
16 to make sure we have a mission that's going to go.

17       As a proposer, you should be aware that these are  
18 the things that we have to fulfill first before we  
19 do anything else in terms of instruments on the  
20 mission.

21                  So essentially, this ends up being what  
22 we have to do and so we'll select instruments to

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1 make sure we're doing this and then anything else  
2 is bonus, an enhancement.

3 So assess the biological potential of  
4 at least one target in the environment. Identified  
5 prior to MSL or discovered later. Characterize the  
6 geology of the landing site on all spatial scale or  
7 many spatial scales. And then also look at the  
8 planetary processes relevant to past habitability.

9 So that's the science floor. This is what we're  
10 targeting. This is how we sold the mission. This  
11 is what it's supposed to be.

12 Next slide, slide -- there's no number.  
13 Science Objectives. The rest of the science  
14 objectives.

15 Okay, also we're looking to help out  
16 human exploration and so one of the things we're  
17 considering is a broad spectrum of radiation and  
18 measuring that on the surface and then also a lower  
19 priority is if you have an instrument that also is  
20 capable of looking at things that tell us whether  
21 or not the Martian environment is toxic and we pick  
22 the example of chromium six just because that's one

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1 of the things called out. It doesn't take very  
2 many letters to write.

3 So these are the things and in some  
4 ways what's guiding this is the goals of the Mars  
5 Exploration Program. So one of the things I wanted  
6 to mention that Jeff showed, went through the  
7 Library, all the things are in there, remember, we  
8 have a priority of what are you supposed to be  
9 proposing? You propose to the AO. It also says in  
10 there that we're also interested in Mars  
11 exploration goals. So you should go and look at  
12 those and it may be that you meet some of those and  
13 that would be good for your instrument, but what we  
14 have to do is meet the science floor and then  
15 everything else is added on to that. And it's one  
16 of those things where not being part of A, B and C  
17 doesn't mean that you should not propose an  
18 instrument because there are things that we can do  
19 that add on. Not all the volume and mass is taken.  
20 That can enhance the mission and make it a  
21 spectacular mission.

22 Next slide.

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1           So how are we going to rate the  
2 proposals? You have to have a scoring system and  
3 so the science merit is 40 percent; feasibility is  
4 30 percent; and implementation risk is 30 percent.

5

6           Next slide.

7           The science merit basically is judged  
8 by the independent panel of its impact and  
9 relevance to the overall MSL science objective of  
10 looking at a habitable, potentially habitable site.

11          And so when you go through here, how do you judge  
12 whether or not this is good science, it fills  
13 knowledge gaps, it provides us with fundamental  
14 knowledge about Mars. It could be something that  
15 tells us in the broader field of space science and  
16 also supports the on-going Mars investigations.

17          The relevance is just as was listed in  
18 the AO. Meeting the science floor and other  
19 secondary objectives. But as you can see, it also  
20 can be appropriate for a Mars Exploration Program  
21 and it might even just address something in the  
22 Mars Exploration Program goals that isn't part of A

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1 through E and that's perfectly valid.

2 Next one.

3 Feasibility. Basically, this is  
4 whether or not we think the Science Panel, whether  
5 or not they think the instrument will work, whether  
6 or not it will actually do the measurements that  
7 the investigator proposes and whether or not  
8 they'll answer the question that the investigation  
9 has proposed. In fact, one of the things I didn't  
10 say is that these proposals are proposals for  
11 investigations. So there's something that you say  
12 that you're going to learn by doing this, and part  
13 of the activity is you have an instrument that you  
14 want to make the measurements to give you the data  
15 so that you can do your investigation. So it's  
16 important to keep in mind that you're proposing an  
17 investigation. And that's what keeps it in the  
18 science realm.

19 So you have a flow down of how you get  
20 from your objectives to what you're measuring. We  
21 actually look at the competency of the PI and the  
22 associated Co-Is. And then also the adequacy of

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1 plans for the data and tied into the publications.

2 Next slide, and this is my last slide.

3 I'm not going to say much about it because Wayne  
4 is going to talk about it and this is basically the  
5 risk of the proposed instrument and whether or not  
6 it can make it with its management, with its cost  
7 or technologically whether it's feasible.

8 I'll stop there and are there any  
9 questions?

10 QUESTION: I have a brief question.  
11 One of the slides earlier this morning said that  
12 the AO is primary and the PIP is secondary, but  
13 then your document hierarchy saw the PIP as being  
14 AO fact dependencies and then PIP.

15 MR. MEYER: Jeff's slide had only two  
16 things mentioned and that was the AO and the PIP.  
17 That AO takes precedence over the PIP and I had  
18 four things listed which were the AO, Frequently  
19 Asked Questions, the appendices and the PIP.  
20 Essentially, those two statements aren't  
21 inconsistent. Jeff didn't list the other two,  
22 that's all. And it really is the AO is the

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1 priority.

2 MR. SIMMONDS: The Frequently Asked  
3 Questions address questions that are raised both  
4 against items in the AO as well as items in the  
5 PIP. In fact, most of those questions are with  
6 respect to details in the PIP. They're all  
7 intermixed, but I think what Mike was going after  
8 is where there's a question, an answer related to  
9 the AO, it may very well modify the effect of the  
10 AO.

11 MR. MEYER: Hopefully, this will all be  
12 consistent by the time we get to actually receiving  
13 the proposals.

14 The real purpose is to convince you  
15 that you should read the AO like you're a Talmud  
16 scholar and see what it says for writing your  
17 proposal.

18 QUESTION: Will you continue to keep  
19 the Frequently Asked Questions until the proposals  
20 are due?

21 MR. MEYER: The problem is that we  
22 can't have let's say at the eleventh hour a -- oh,

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1       somebody asked the question and it fundamentally  
2       changes the whole rules of the game. So I forget  
3       what we said in terms of two weeks, essentially two  
4       weeks before the proposals are due we're fixing the  
5       Frequently Asked Questions and basically will not  
6       accept any more questions because if we're  
7       changing, in some ways, by answering a question in  
8       the Frequently Asked Questions, we're changing the  
9       rules of the game for everybody. So essentially,  
10      two weeks before proposals are due, we're not going  
11      to accept any more questions so that everybody at  
12      least while they're going through the signature  
13      phase of getting their proposals in, don't have to  
14      suffer with all of a sudden something is not  
15      allowed or something has changed.

16                QUESTION: Does the TMC panel weigh in  
17      on the scientific feasibility?

18                MR. MEYER: The question was whether or  
19      not the TMC panel weighs in on the scientific  
20      feasibility? Essentially the Science Panel has an  
21      idea of what TMC has evaluated and there may be  
22      something pointed out by that panel which affects

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1 the science panel's view of the feasibility of the  
2 instrument. So there's not a formal way where  
3 that's done, but essentially -- I'm sorry, but this  
4 is megawatts and that's not going to work. The  
5 Science Panel will also go yeah, megawatts is not  
6 going to work. So there's some communication.

7 We have a representative from TMC in  
8 the Science Panel specifically for in case somebody  
9 has a question. Well, can this actually work in  
10 this direction and that's basically to make sure  
11 that everybody has all of the information that's  
12 available.

13 QUESTION: I have a question about the  
14 slide where you talked about science implementation  
15 you listed some of the elements that go into that  
16 evaluation. One of them was cost realism. I'd  
17 like to ask about the relationship between that and  
18 the thing that Jeff said about the configuration  
19 being responsive to the science proposed. And what  
20 I'm wondering is is the relative budget allocation  
21 also responsive to the science proposed?

22 MR. MEYER: I am trying to think of a

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1 short way. Did you get the whole question? I'm  
2 not sure if I can shorten it. But basically, part  
3 of the science feasibility is looking at the cost.

4 But also part of whether or not something has a  
5 risk has to do with the cost.

6 Okay, the Science Panel's job looking  
7 at the cost is looking at whether or not the costs  
8 are appropriate for the instrument. In other  
9 words, there are two aspects, whether or not --  
10 this is so cheap, we can't imagine how the person  
11 can build it for that amount of money. Or this is  
12 great and the costs seem to be properly allocated,  
13 everything, but this is about twice as much as I  
14 would normally think a spectrometer would cost,  
15 that sort of thing.

16 Now Wayne's group is going to be  
17 looking at it in terms of whether or not the cost  
18 models seems to be right. Sort of how -- it's not  
19 going to be whether or not a spectrometer costs  
20 this much, but it's more is what's laid out for the  
21 cost reasonable? Does it fit within the phasing of  
22 the budget and that sort of thing. So it's more

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1 from a manager viewpoint than from the science  
2 viewpoint of how much does a grading cost and that  
3 sort of thing.

4 Is that -- it doesn't help? What?

5 QUESTION: What I would like to know is  
6 if the configuration of the Rover is going to be  
7 responsive to the science proposed? Is the  
8 relative allocation between the groups of  
9 instruments also going to be responsive to the  
10 science proposed or is that --

11 MR. MEYER: Okay, in the AO there's a  
12 listing. We think this percentage of money will go  
13 to the mast. This percentage of money will go to  
14 the analytical instruments. This much to the  
15 contact instruments. As you'll notice, we give a  
16 range where if you add it up, it adds up to more  
17 than 100 percent. So the whole idea is that when  
18 we get the instruments, we'll have a much better  
19 idea of how to allocate the money. And the point  
20 is to give you guys some idea of what we kind of  
21 think it should cost in the different ranges. So  
22 if you're proposing an instrument to the mast,

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1       that's twice the amount of money that we have  
2       allocated for the mast. You'd have to ask yourself  
3       whether or not it's going to be considered a  
4       reasonable proposal.

5               And it may be. It may be one of these  
6       things where it will do everything and you can do  
7       away with all of the analytical instruments. It  
8       would be nice.

9               Anyway, so it's just arranged so that  
10       we give you some idea of what we think is probably  
11       reasonable, but as with a proposal that's well  
12       within the box, the range that we gave, it's up to  
13       the proposer to make the case of why the instrument  
14       is important, what we'll learn, how does that fit  
15       into the science goals and why this more important  
16       than somebody else's instrument, not names  
17       specifically, but you know, how does this all fit?

18       The proposer has to make the case why this is a  
19       good expenditure of money and should go on the  
20       measurement. It's just that it's to provide some  
21       idea so that we don't end up with -- one of the  
22       things, our fear is is that every time we put all

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1 the instruments together for a proper mission, it  
2 ends up being twice the cost of the money that we  
3 have available. So part of the reason of putting  
4 the ranges there is that we at least give you some  
5 idea of how to scope the magnitude of your  
6 instrument so that it's potentially reasonable.

7 How are we doing on time? So I guess  
8 if there are no more questions, what we'll do is  
9 we'll take a break and return at -- why don't we  
10 speed it up a little bit and come back in 15  
11 minutes from now so according to my watch it would  
12 be 10:20. Is that okay?

13 Great.

14 (Off the record.)

15 MR. MEYER: Wayne Richie will tell us  
16 about the technology, management and costs and  
17 other factors in determining the implementation  
18 risks posed by the proposals.

19 MR. RICHIE: Good morning. I think  
20 it's still morning and for those of you who don't  
21 know me, I'm Wayne Richie and I wear a NASA Langley  
22 badge, but in actuality I work for NASA

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1       Headquarters, specifically and exclusively and  
2       we're firewalled off from the rest of Langley in  
3       doing this job.

4                 First slide, John.

5                 I want to spend a bit of time here  
6       talking about this process that we've developed at  
7       Langley and been using for a good period of time,  
8       to re-emphasize some of the points that Mike and  
9       Jeff and others have already made, but I want to  
10      point out a few things. First of all, on the  
11      Evaluation Plan, yes, we have done our Evaluation  
12      Plan and they know how we're going to do things and  
13      how we're going to do things for this review is  
14      pretty much the way we've done other reviews, even  
15      full mission reviews like Mars Scout, etcetera.  
16      But the emphasis point is that we're going to have  
17      to revisit that once we know how many proposals  
18      we're going to have and who all is involved and so  
19      forth.

20                So again, a little commercial for the  
21      Notice of Intent and you'll notice that we have  
22      great interest in who is in this conference and

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1 who's on the telecon. That's for us to try to  
2 figure out in the clear. We're trying to figure  
3 out who and how many proposals we're going to have,  
4 so that Mike and I can better prepare ourselves for  
5 the upcoming review and do the best job of it.

6 A lot of people drifted in a little bit  
7 late in the middle of the pitch and may have not  
8 seen this part of the presentation before and may  
9 have missed some of Jeff's, so I want to re-  
10 emphasize again who is doing what in this review  
11 and I'll talk about that a little bit.

12 Basically, the thing I want to talk  
13 about is Mike's already talked about this is our  
14 evaluation process. I drew a box around it because  
15 we want you to understand that that review is an  
16 independent assessment of both the science and the  
17 technical aspects of your proposal. It will be  
18 done and we'll talk to you about how it will be  
19 done in a lot of details on the technical.

20 I want to emphasize that again on  
21 people, Mike and I will be doing this process here  
22 and when we get all the way to the end, all the way

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1 to the end and we initiate the contract, then we  
2 turn it over to Jeff and the JPL folks to implement  
3 this. Notwithstanding the fact that I'm telling  
4 you this is a one-step selection process, the rest  
5 of the process is still going to be the standard  
6 NASA process in that you will need to meet the  
7 specifications at PDR confirmation. You will have  
8 to get confirmed before you move into Phase C/D.

9 Another point I wanted to emphasize is  
10 we said we were going to run a compliance check and  
11 in this AO, as an innovation, the very last page in  
12 the AO tells you what we're going to be looking for  
13 on compliance, just in case anybody wants to look  
14 at that. I think you should.

15 One other point is Mike did a great job  
16 of explaining categorization. The one point I want  
17 to emphasize is we didn't make that up. That comes  
18 directly out of NASA and government, federal  
19 acquisition regulations. The definitions you see  
20 in the AO, etcetera, are directly out of those  
21 regulations. It's up to us to interpret and  
22 implement those regulations, but they are -- we

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1       didn't make those up and those are the ones we're  
2       going to abide by.

3               The process that I'm going to talk to  
4       you about again, the main thing I want to talk to  
5       you about is the part that I chair which is the  
6       Technical, Management and Cost Review.       That  
7       process takes place a bit more speedily for this  
8       review than it has for others, so the emphasis  
9       point is this schedule that we made up some time  
10      ago was expecting this AO to be out a bit earlier,  
11      like a month earlier and this target was at least  
12      two weeks earlier.   So what that means is on the  
13      present schedule, Mike and I have at least two  
14      weeks less than we originally planned.

15             If this is any indication and the  
16      response is overwhelming, we may have to extend  
17      this process in here and this date would move, but  
18      because we've got a Mars launch window and we've  
19      got Jeff and the JPL Projects asking us to try our  
20      best to stay on schedule, we're going to do our  
21      best to stay on this schedule right here,  
22      regardless of how great the response might be.

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1           Next chart. Many of you that's been to  
2           our briefings before will understand why I put this  
3           chart up here. And this is a chart I invented to  
4           talk to Ed Weiler about when we bring proposals in  
5           and explain to him that yes, this is indeed a low  
6           risk or a medium risk proposal. He said how can  
7           that be? I said it's because you're trying to  
8           consider maybe the inherent risk of the projects or  
9           you're trying to consider the programmatic risk,  
10          but what we're going to evaluate for you is the  
11          technical, management and cost implementation risk  
12          and I'll talk to you about that a little bit more.

13                 I want you to understand first that  
14          we're looking at implementation risks.

15                 Next, Jeff.

16                 Mike's talked about this a little bit,  
17          so I want to spend a little bit more time on it.  
18          Maybe not a lot. First of all, Technical,  
19          Management Cost and the O is program factors and I  
20          am going to talk to you about other program factors  
21          and how it enters into this solicitation. But  
22          technical, management and costs, I'm sure some of

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1 you have heard me say you can break that into many,  
2 many, many elements and you can roll it all the way  
3 back up to technical, management and costs.

4 For this AO, we're talking and that's  
5 the risk that we're judging. For this AO, these  
6 are the words out of the AO, Section 7.1 and it  
7 specifies this list of factors that we will, in  
8 fact, look at for risk assessment. The technical  
9 approach to the design, development, integration  
10 and test of the proposed hardware and software; the  
11 adequacy and robustness of the proposed resources  
12 (technical, management and cost); the competence  
13 and relevant experience of the technical and  
14 management team; the soundness of the plans and  
15 commitments to deliver the investigation on time  
16 and within budget; the soundness of the business  
17 practices used to manage the investigations. This  
18 sounds a little bit innovative here, but in the era  
19 that we're in we've got to know that you know how  
20 to manage the resources, report them, track them.  
21 Cost realism and reasonableness. And we'll talk to  
22 you about that, those things as we look at the

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1 remaining charts.

2 Next chart, John.

3 As I said, we didn't invent this  
4 process for this review on the fly and this is a  
5 chart that I've always shown also and I want to  
6 make you aware of it. The basic principles that  
7 I've used to do these reviews is number one: we  
8 want to make sure that all proposals are reviewed  
9 to identical standards. I think that's very, very  
10 important and some of the things we use to do that  
11 as I said, put out an evaluation plan, tell you  
12 what we're going to do, follow that plan and when  
13 you're getting debriefed you'll see some of these  
14 same charts again. We'll show you we did what we  
15 said we were going to do.

16 The other thing I want to emphasize to  
17 you as to why this works is Code S established our  
18 office at Langley in 1996 to do specifically  
19 discovery and explore proposals and that means help  
20 write the AOs and help staff -- conduct the  
21 technical, management and cost and other program  
22 factors reviews. Since that time we've expanded a

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1 lot of our work and we've done other things as  
2 we've been requested by headquarters now to do  
3 Mars, soon to be doing Lunar.

4 Code Y has asked us to help them a  
5 little bit, so we've got a piece of the Code Y  
6 works. Where we used to be SSSO, they put an E in  
7 front of it so we're not the gas station at  
8 Langley. ESSSO.

9 But the point being is that we have a  
10 standard process. We use it every time, so you  
11 know what we're going to do and that's the process  
12 we follow. We don't arbitrarily change it. We  
13 bend it. We modify it, we improve it if we can, in  
14 response to workshops and comments back from the  
15 community.

16 The second principle is that both in  
17 the science -- this is true of the science area  
18 also, but for the technical part, I try to make  
19 sure that we staff our team with competent peers in  
20 the area of the factors that they're going to be  
21 evaluating. That's pretty hard when the community  
22 turns in a huge response and accumulates every one

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1 of the technical experts in the whole world, but we  
2 will, in fact, go out and find somebody that we  
3 feel is a technical expert in the areas we're going  
4 to have to evaluate.

5 And in fact, Mike and I will have to  
6 return to headquarters management probably before  
7 the final and show them what the team is going to  
8 be, who these people are that they're going to be  
9 evaluating and show that they're competent to do it  
10 and they're not conflicted in any way with the  
11 response they're going to do the evaluation with.

12 Very important, the next point that I  
13 want to point out. For us to get through this  
14 process, it's a team job. I will, in fact,  
15 instruct my evaluators, go look at everything the  
16 proposers give you and try to assert that they can,  
17 in fact, implement at low risk the proposal that  
18 they're turning in. But I want to emphasize that  
19 the burden of responsibility is really on you.  
20 That means you should take advantage of all of the  
21 pages that we offer you in Appendix B, all of the  
22 appendices that we offer you.

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1           You need to be innovative in how you  
2       structure your material. We say you don't have to  
3       have it totally redundant in sections. You can  
4       refer to other sections. Be innovative. Show us  
5       that you can do the job and we'll -- no matter how  
6       you do that, if you do that, then we're going to  
7       give you the benefit of the doubt and say that you  
8       can, in fact, do it.

9           The reason I want to spend a minute  
10      there is because some of the prior speakers talked,  
11      for example, about cost and cost models. Well, I'm  
12      not going to tell you all about how we do the cost  
13      assessment, but trust me, it is not just chunking  
14      in some numbers into a parametric model. That's  
15      not it.

16           Number one, is if you convince us  
17      you've got the right numbers, we'll throw our model  
18      numbers away, okay? So that's the reason I want to  
19      emphasize this point here. A lot more into cost  
20      review than just that.

21           I think everything is covered on that  
22      page, John.

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1           The process, we talked about it a  
2 little bit, but there's two independent processes  
3 going on, even a question from the audience. There  
4 is two separate panels, the Science Panel will be  
5 doing its job in parallel with the Technical,  
6 Management and Cost. And in fact, the TMC0 is  
7 completed before the final plenary of the Science.

8       We will put a representative, as Mike mentioned on  
9 the Science Panel to answer questions, but the risk  
10 rating from our group will not be known to the  
11 Science Panel, will not be known. We want them to  
12 judge the science and if the science is great and  
13 we think possibly or definitely the proposal can be  
14 done, then we'll send it that way to categorization  
15 and it will come out Category 1 or 2.

16           The process, let's see, I think I've  
17 covered this. And the overall objective, we've  
18 talked about the evaluation itself that says that  
19 technical management cost evaluation is determined  
20 for all proposals, the level of risk of  
21 accomplishing the scientific objectives of the  
22 investigation, as proposed, on time, and within

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1 cost.

2 A little bit more about the process  
3 itself. We will have people all over the country  
4 supporting this. I know that for a fact and we  
5 will do it in somewhat a geographically dispersed  
6 manner using a secure remote evaluation system,  
7 collect the findings and we'll use telecons to  
8 coordinate the results and at the end of the  
9 process we get all of those reviewers together for  
10 one week at Langley.

11 Next slide.

12 So who are these guys -- we know that  
13 you all have the best and the brightest. Who are  
14 these other guys? They'll be the best I can get  
15 that are non-conflicted. Most often, they turn out  
16 to be Civil Servant, maybe from centers that didn't  
17 propose. We use DOD personnel. We have used them  
18 from other agencies. There will be contractor  
19 consultants. I can assure you that there will be  
20 peers in the area of the expertise they're supposed  
21 to do because we're going to have to pass that test  
22 with Orlando and others.

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1           In some cases, we may have specialist  
2 reviewers, especially in this review, somebody will  
3 come in with something that's just so unique, I  
4 need a person in that area and we'll go find  
5 somebody to review that particular thing.  
6 Specialists, however, will not be voting in the  
7 overall end of the process. They will provide  
8 their input and that will be added to other  
9 people's reviews as part of the process.

10           The TMC0 findings in the end are going  
11 to be the consensus of the entire panel. We're  
12 going to talk about this a little bit pictorially  
13 on another slide, but basically we've come up with  
14 findings and the findings are basically no finding  
15 that you did what we thought you would do. Those  
16 that are above expectations are called strengths.  
17 Those that are below are called weaknesses and  
18 findings, all of our findings will result in a risk  
19 rating.

20           Every proposal is evaluated by a team  
21 of people and that's going to be determined by how  
22 many proposals we got. After the team consensus,

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1 all of the proposals in that week long process will  
2 be presented, all of the proposals and their  
3 findings will be presented to the entire team so  
4 that we can take advantage of the reviewers on the  
5 other teams to critique and make sure that we were  
6 fair and level across all.

7 Next slide.

8 Some definitions for you. These are  
9 the word definitions. I'm going to show you a  
10 pictorial representation also. Basically, a low  
11 risk proposal is one that has no problems that  
12 cannot normally be resolved within the resources  
13 proposed or we believe that the problems are not of  
14 sufficient magnitude to doubt the proposer's  
15 capability to accomplish the investigation with the  
16 envelope of resources they provided in the  
17 proposal. The envelope, we'll talk about.

18 Medium. We can find problems and it  
19 makes us a little uncomfortable about the resource  
20 envelope, but we still believe that -- and  
21 technologies may be or developments may not quite  
22 be ready, but we believe that there's available

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1 time and money in the proposal to get these jobs  
2 done. Basically, the project is a little more  
3 complex and the resources are tight, but we still  
4 think it can be done.

5 Again, if we think you're high risk,  
6 the benefit of the doubt or no, we believe that the  
7 problems are of sufficient magnitude and the  
8 resources are not sufficient to allow you to bail  
9 yourself out and we would predict that the project  
10 is -- the failure probability is very high and that  
11 the envelope is inadequate.

12 Next slide.

13 As I said, this is a pictorial diagram  
14 of what -- the word charts I gave you before.  
15 Strengths from the technical management process;  
16 weaknesses from the technical management process;  
17 the cost risk assessment, all feeds into a  
18 consensus and it leads into an overall risk rating.

19 Next chart.

20 The envelope pictorially. We invented  
21 this to give a little bit of visualization to  
22 Headquarters and to others. It just says if

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1     available resources are -- the implementation of  
2     this project, available resources are of sufficient  
3     magnitude that we think for sure you've got it  
4     covered, then we're going to call it low risk. If  
5     the resources you're proposing are tight in any  
6     area or all of the areas, but still probably is  
7     enough, then that's going to be medium. And where  
8     we find that the resources that are available are  
9     inadequate to what we think it takes to get the job  
10    done, then we're going to say that's high risk.

11                 Next chart.

12                 On this chart, I want to talk about a  
13     couple of things. Let me make sure I've got a  
14     couple of things I want to emphasize on this page.

15                 This chart is directly on a chart that  
16     I use, that I talk about the chart with Ed Weiler  
17     and Headquarters on what we're doing and how we're  
18     doing it, Orlando. And it's sort of my caveat  
19     page, so since I give it to them, I give to you.

20                 And it says hey, this review is all  
21     about selecting the science. The proposal  
22     selection is driven primarily for the selection of

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1 the best proposed science. Notwithstanding that,  
2 we think implementation risk will be an important  
3 evaluation/selection criterion. The TMC panel  
4 Implementation Risk is based on what we know in the  
5 proposal is going to be a preliminary concept.  
6 This is not a design review. We're going to look  
7 at your concept and we know it's preliminary and  
8 that's the reason why in some cases we recognize  
9 that it will not be mature in all respects and we  
10 will try to give you the benefit of the doubt  
11 whenever we can.

12 The cost analysis is done by the panel,  
13 not just by a couple of cost weenies. It will be  
14 done by the entire Panel. And that cost analysis  
15 will include first and foremost the demonstration  
16 you give us that the numbers are right. Somewhere  
17 along the line, yes, I will do some parametric  
18 analyses. Yes, we will do probabilistic cost  
19 evaluation. In no case do we come up with what we  
20 say is what the proposal is going to cost, should  
21 cost comes later.

22 The point here is to re-emphasize again

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1       that we tell Ed Weiler and Orlando medium and low  
2       risk because we're not interfacing directly with  
3       the community and resolving our questions as we  
4       would do in the two-step process with some benefit  
5       of the doubt. We say if the science is compelling  
6       and it's medium or low risk, select it. If it's  
7       high risk, we don't recommend it. And I think  
8       that's all this particular thing says.

9               Once we made the selection, as I said a  
10       little bit before what will happen is you get into  
11       Phase A/B and we get the details and you still are  
12       not home free. If we find in the details when they  
13       begin to come in, you really cannot get to the PDR  
14       confirmation, you're still subject to being non-  
15       selected for flight.

16               Next slide.

17               The next couple of slides I'm not going  
18       to read them to you. I think you're capable of  
19       reading it and I don't want to give away all my  
20       little secrets of what we do and how we do it, but  
21       basically here are some, I want to emphasize some  
22       of the questions we ask ourselves when we're

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1 reading your proposal.

2 I think there is one page or two pages  
3 of those, John. You can go ahead to the next  
4 chart.

5 The next chart says well, if that's  
6 true, what will it take to be a low risk proposal.

7 Here are some of the things we would look at and  
8 attempt to convince ourselves you have a low risk  
9 proposal.

10 Next chart.

11 Okay, two things. I said TMC0,  
12 Technical, Management, Costs, other program  
13 factors. I want to emphasize a couple of things  
14 that are different about this solicitation from  
15 prior ones. The 0 part which in this AO is  
16 specifically education and public outreach and  
17 small disadvantage business, there is no request  
18 for technology in this proposal. The number one  
19 thing is these things are not subject to  
20 categorization, but they are subject to compliance  
21 and I told you to look at the compliance page and  
22 you'll find that there is a compliance item that

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1 says all proposals will be checked for compliance  
2 to requested commitment for E/PO and it should say  
3 SDB. That's in the compliance check.

4 NASA considers these programs very  
5 important, but they recognize that in round 1 when  
6 we're trying to select the science and look at the  
7 doability, it's a little unrealistic to ask what  
8 are your detail plans for this? Notwithstanding  
9 that, we will have a standard Appendix C and B with  
10 infinite details about what will ultimately be  
11 needed for education, public outreach and SDB.

12 What we are going to look at though is  
13 the proposals that make it to Category 1s and 2s  
14 and might be selected. We will then convene a peer  
15 review panel to look at those proposals and provide  
16 comments that will be debriefed to the winning  
17 proposal so they'll know where the peer review  
18 panel feels that you need to provide emphasis in  
19 this area.

20 John, can we back up to chart, I just  
21 realized there was one other point I wanted to  
22 correct on Slide 11, before I get to SDB and my

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1 final chart.

2           There is an error on this charge and  
3 I'm going to be correcting it and putting it on the  
4 web page. It says "high risk proposals will not be  
5 selected." That should say "will not be  
6 recommended for selection." Mike and I -- don't  
7 throw any swords at us or spears -- we don't do the  
8 selection. We put together the evaluation. We  
9 make recommendations, but we do not do the  
10 selection. So I do want to emphasize not selected,  
11 that's up to NASA headquarters. So I'm going to  
12 reinsert as I've had before "will not be  
13 recommended for selection." Sorry about that.

14           And we can go back to Chart 13 or  
15 whatever it was.

16           Slide change.

17           I think I've covered everything I  
18 wanted to say in here. This chart doesn't talk a  
19 lot about it, but actually again, emphasizing the  
20 AO as opposed to  
21 -- well, back up to 15 for a second.

22           Slide change.

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1           This chart does not emphasize, it talks  
2   more about Appendix B and Appendix C, but in  
3   Appendix -- excuse me, page 27, Section 7.4 of the  
4   AO where we are talking about the selection  
5   process, another reason you want to pay attention  
6   to this area is it says that all other things being  
7   equal, the selection official can use this area to  
8   discriminate among otherwise equal proposals. So  
9   you have to pay a little attention to it after all.  
10   And that's the only other point on that page.

11           Last chart.

12           As I said, the SDB part of what we're  
13   going to be looking at, at least we're going to be  
14   looking at and I'm sure Jeff will also, is the  
15   commitments from the project like we talked before,  
16   but it also says for him to contract, it says in  
17   Appendix A and other places, that any of our costs,  
18   Phase A/B costs that are expected to exceed  
19   \$500,000, the proposers are organizations not being  
20   classified as small business concerns will need to  
21   be evaluated.

22           QUESTION: Since the PI selected here

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1 will be under contract to JPL which is under  
2 contract to NASA, what constitutes things that will  
3 help you with your goals as far as small business,  
4 things that JPL does or things that the PI do or  
5 subcontracts from the PI? How do you -- how many  
6 levels down can you go and still say we're meeting  
7 goals?

8 MR. RICHIE: Boy, I wish you hadn't  
9 asked that question. No, no. We've struggled with  
10 this before and to be honest, this community here,  
11 we have gotten -- depending upon the way the  
12 question was worded, varying answers from Legal.

13 But I can tell you how we're going to -  
14 - you're talking to the people who are going to do  
15 it in here. How we're going to consider it,  
16 whether it's the top tier down or at the top tier.

17 Anything that contributes to somebody's goal, if  
18 you point it out, we're going to consider it. If  
19 you're contributing to the objective that we're  
20 working against, we're going to consider it. If  
21 somebody wants to rule that out later, that's fine,  
22 but we're not going to do that.

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1                   That's all I have, if anybody has any  
2                   questions.

3                   Yes?

4                   QUESTION:       We didn't see parallel  
5                   evaluation for benefit.   We saw risk.   It is  
6                   conceivable a parallel review for the benefit.  
7                   Science may be very good, but the benefit may still  
8                   be small.

9                   And it is even possible at the other  
10                  end of the spectrum --

11                  MR. RICHIE:     Actually, we did.   In  
12                  Michael's pitch, he's evaluating two things with  
13                  his Panel, the merit of the science, the merit of  
14                  the science.   And we can't let that be too  
15                  subjective, so the merit of the science -- let me  
16                  let Michael answer that question.

17                  (Laughter.)

18                  MR. MEYER:    The science is a benefit  
19                  and it may be outside of the goal of not only the  
20                  MSL, but also the goals of the Mars Exploration  
21                  Program to be a benefit to the space science in  
22                  terms of things that they're interested in.   I'm

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1 not sure what else you may be referring to.

2 QUESTION: What I'm thinking of is you  
3 decided to emphasize risk as a whole separate  
4 category and not benefit as a separate category.  
5 And if one were to do a benefit/risk analysis which  
6 I think might be appropriate, it's even conceivable  
7 that a very high risk proposal might have  
8 sufficient potential benefit to be selected.

9 MR. MEYER: Yes, essentially they are.  
10 Instead of using the word benefit, let's use the  
11 term science because that's what the purpose of the  
12 mission is. I'm not sure what other benefit there  
13 may be.

14 QUESTION: They're not synonymous.

15 MR. MEYER: They're not synonymous, but  
16 I'm not sure what other benefit there may be other  
17 than science.

18 MR. GARVIN: If I may, I think this is  
19 a good example, Michael, of what the selection  
20 official takes care of, that cross section of the  
21 implementation risk with the scientific benefit is  
22 really that trade space that comes up in selection

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1 and they do the integration of cost benefit  
2 naturally as experienced selection officials are,  
3 such as the one we have. So that's how I would  
4 submit this is done.

5 MR. RICHIE: We definitely don't want  
6 to invent in this process something that's nebulous  
7 and difficult to go about doing. So here again,  
8 what we always do is we split up the jobs and we  
9 fill up the bucket with evaluations, provide it to  
10 the selection officials as Jim points out. So  
11 we've got a bucket that says merit to the science,  
12 feasibility to the science, cost and risk of  
13 implementation of it. These three things, however,  
14 the 0 part is not being evaluated. All other  
15 things are equal, it can be considered, goes into  
16 categorization.

17 Categorization committee is a different  
18 group of people and it looks at it at an orthogonal  
19 way that says it's Category 1, the very best  
20 science and doable; the second best science and  
21 doable; great science, but we're not sure it can be  
22 done or it needs some development and everything

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1 else.

2           Coming out of that process, that's the  
3 only way you can not get into a question of  
4 benefit. Benefit is a little bit subjective, but  
5 the selection official can determine that on his  
6 own. The fact is, John, go all the way back to the  
7 overall flow.

8           Okay, right there. You're right. We  
9 did not say that coming in here is other program  
10 requirements, schedules, budgets and considerations  
11 and can come into Michael for consideration. And  
12 what we didn't say and you can read in the AO what  
13 Jim has pointed out is that in the end we brief the  
14 AA and he can make the decision how he sees fit.  
15 And that could be determined on late breaking Mars  
16 Discovery, somebody else pointed out. That could  
17 be based on oh my gosh, the payload accommodation  
18 can't -- the best thing can't quite be  
19 accommodated, but that's the only way we can make  
20 it. It's fair and it's straight forward as  
21 possible. Benefit is just too nebulous to deal  
22 with.

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1 Yes.

2 QUESTION: What about the grand modus  
3 of operation for a given instrument. Is that taken  
4 into account in any of this?

5 For instance, you have a primary  
6 science associated with a given instrument, but the  
7 possibility that it's been graded lower, an  
8 instrument can still provide you data.

9 MR. RICHIE: In Appendix B, we asked  
10 you to talk about such things as that which says  
11 that if you want to -- and these proposals, we're  
12 not asking you for a de-scoped plan, not really.  
13 But if you think that it would be good to show how  
14 your instrument gracefully can be de-scoped or  
15 degraded down to some reasonable level and still be  
16 of value, that's a point you make to us,  
17 resiliency.

18 QUESTION: How do you assess that as  
19 low risk and medium risk what by and large is  
20 sufficient to meet those risks. We provided de-  
21 scope plans; would that mean it's low risk?

22 MR. RICHIE: That is a good question.

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1 We go by what you tell us, what you're proposing to  
2 do. And if you say oh by the way, this thing can  
3 gracefully degrade, we will look at that also. But  
4 more so from my Panel standpoint, we'll be looking  
5 at what can it really do full up? Those kind of  
6 comments we have a place on our forum to provide  
7 comments to the Science Panel and we'll make the  
8 Science Panel well aware that there's a difference  
9 between the full up instrument and what it might  
10 degrade to and they can, in fact, on their forum,  
11 talk about the bottom line. Two things, full up  
12 science and what it's worth, degraded.

13 QUESTION: To what do you assign the  
14 risk to your --

15 MR. RICHIE: We assign our risk based  
16 on full up, not degraded. Can it be implemented?  
17 That's a good point.

18 The question is still about degraded  
19 modes of an instrument as proposed, not something  
20 that we find during an evaluation, but you guys  
21 tell us ahead of time here are some graceful  
22 degradations and how will that be treated in risk?

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1           My Panel will be evaluating the full up  
2 baseline instruments and proposals. Comments to  
3 those lesser modes will be passed into the Science  
4 Panel and they will grade whether or not that's  
5 good science or not. It will not enter into the  
6 risk rating unless somebody asks us to do that.

7           Any other questions? Michael?

8           MR. MEYER: We will now hear from  
9 Sandra Bembry to give us a little bit on the  
10 mechanics of getting the proposals and registered  
11 and logged.

12          MS. BEMBRY: Next slide.

13          Many of you probably have already  
14 submitted your cover page before on a previous  
15 program. I just want to give you a quick idea of  
16 what we do, the roles that we both play. And the  
17 PIs, of course, want to ensure that what's in the  
18 SYSEYFUS database is accurate and up-to-date.  
19 Also, that all the team members are registered on  
20 that system and of course, the copies, there are 50  
21 copies, plus a CD for each paper copy should be  
22 delivered to our office, NASA Peer Review Services

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1 by July 15th.

2 We, of course, have already posted the  
3 AO on the website. We're responsible for posting  
4 the NOI and the cover page submission pages. If  
5 you have any questions when you are submitting your  
6 NOI or cover page, please contact us either at the  
7 e-mail address, proposals@hq.nasa.gov or the phone  
8 number, between Monday through Friday, 8 to 6  
9 Eastern Time, 202/479-9376.

10 Next slide, please, John.

11 What you'll see when you go the URL  
12 address, <http://proposals.hq.nasa.gov/proposal.cfm>  
13 and I'm emphasizing this because I noticed that  
14 there was an old address on the AO, so this is the  
15 correct URL address that you should be using.

16 You'll see this online site. As a new  
17 user you should click on the link that says new  
18 user. If you've forgotten your password, our  
19 office will send you an e-mail back in probably  
20 less than a minute to give you that information.  
21 Otherwise, you would click on the log in.

22 Next slide, John.

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1           There's where you will put in your user  
2 ID and your password and then click continue.

3           Next slide.

4           Here is where you can add personal  
5 information. There may be some cases where, for  
6 example, you have changed your e-mail address. We  
7 want to get the latest information or changed  
8 institutions and you would edit personal  
9 information there. Otherwise, you should submit  
10 the Notice of Intent on that particular button.  
11 Later, of course, when you're ready for the new  
12 proposal cover page, you will select that button.

13          Next slide, please.

14          Here is where the specific opportunity  
15 of course would be, OSS -- Solar System  
16 Exploration. Select that and then click on the  
17 continue button.

18          And then of course, you have two opportunities that  
19 are on the site now. The one of course would be  
20 the Mars Science Laboratory Investigations and  
21 continue. I put myself in as an example. You would  
22 typically see this Notice of Intent webpage. Of

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1 course, you would go ahead and put in your short  
2 title and full title. This, of course, can be  
3 changed when you get ready to edit for your cover  
4 page. You have the themes here. There are only  
5 two pull down options here. You would have the  
6 Solar System Exploration and Astronomical Search  
7 for Origins and Planetary Systems.

8 Next slide.

9 Then you can put in your abstract  
10 information here at the top. If you do have any  
11 international participation you will enter the  
12 information here as described. And the proposal  
13 type is really deciding whether it will be a single  
14 instrument or a suite of instruments.

15 Then you have the four investigation  
16 groups as mentioned earlier: Analytical  
17 Laboratory, Contact Instrument, Individual  
18 Instrument or Remote Sensing.

19 When you're ready for your proposal  
20 cover page you log in again as I showed you  
21 earlier. A lot of the information will already  
22 probably be there from the NOI, so that kind of

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1       saves you from having to retype. If you want to  
2       modify your title, for example, you can do that.  
3       And of course, here is where you would put your  
4       start and end dates in this fashion.

5               The theme information, if you decide  
6       you want to change it, you can do that. I don't  
7       believe, in this case, that the predecessor NASA  
8       award would apply for the MSL.

9               The abstract information is there. If  
10      you want to modify that you can add that, and then  
11      you have, of course, the DUNS, the Dunn and  
12      Bradstreet numerical system number which is  
13      required and if you don't have that information,  
14      which is a permanent number and the CAGE code, you  
15      can get that from your sponsored research  
16      institution.

17              Next slide.

18              Basically, this is the same information  
19      again and then, of course, this is where you would  
20      have the budget information that you would add in  
21      as well, then you would hit the continue button and  
22      go to the next page and this is where you will also

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1 have any members that you hadn't added, and you  
2 could, by the way, add that. Since these are just  
3 simply snapshots, I tried to keep it as short as  
4 possible, but you could have added your NOI members  
5 there and you can modify it here. For example,  
6 Susan Keddie's name is shown. When you find that  
7 person in the system, in the role, make sure that  
8 you indicate it -- choose one, and then add. I had  
9 one person last week give me a call and said they  
10 had submitted their cover page and they realized  
11 that they hadn't had their members shown and that's  
12 because they failed to indicate the choose one  
13 radio button here over to the right.

14 Next slide.

15 Then, of course, when you are finished,  
16 you can go ahead and you can show your cover page,  
17 look at it first. If you want to still edit it,  
18 you have the opportunity to still -- it's a very  
19 flexible system, so if you need to make changes you  
20 can still do so.

21 Then when you hit, for example, the  
22 Show/ Print button, the next slide will show the

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1 item list of all the things for the particular  
2 program that you are submitting, the cover page  
3 too. You will select the button here, cover page,  
4 proposal cover page and basically you will have a  
5 proposal number assigned. This is your cover page.

6 This is just a partial part of a page. Please  
7 make sure that you, as a PI, sign, date it and also  
8 have the authorized official signature signed and  
9 dated. That original would go in your original  
10 page and your copies also.

11 Any questions?

12 Okay, that's it. Michael?

13 MR. MEYER: So I think now is the phase  
14 at which you can ask those questions you've been  
15 dying to ask all morning and then we'll try not to  
16 answer them.

17 (Laughter.)

18 Yes.

19 QUESTION: In one of the talks there  
20 was going to be an independent review of the  
21 contribution package and I was wondering when would  
22 that review occur? I mean is it in parallel to the

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1 regular reviews that are going on? Is it going to  
2 be TMC0 reviewed? And what happens when a package  
3 fails a review, if you go through TMC0 review like  
4 the science contribution or one has failed, how  
5 would you make up for that loss?

6 MR. MEYER: The question was about the  
7 contributing instrument, what's the story with the  
8 independent review? Is that going on? What's the  
9 schedule? Is it going to go to TMC0, what's the  
10 deal?

11 Okay, essentially, we have initiated  
12 having an independent review. We actually haven't  
13 met yet. We're going to meet with the Russians.  
14 We're gong to meet with the Spanish and see how  
15 they're doing. And essentially, our initial  
16 meeting is going to be on their territory to see  
17 whether or not they had resources, a decent plan  
18 and what they're doing.

19 At that time, it may be obvious that  
20 something -- there's no way that they're going to  
21 make it and we'll make a recommendation to let's  
22 cut our losses while we can and certainly if that's

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1 going to happen we'll put that up as soon as  
2 possible on the web to let people know that we're  
3 not going to have a UV sensor that goes from 200 to  
4 400 nanometers or something like, whatever the  
5 story is.

6 To be candid with you, my expectation  
7 is that we probably aren't going to arrive at the  
8 idea of de-scoping any of the contributed  
9 instruments until after we had people submit  
10 proposals and we're going through the TMC0 process.

11 So the idea is that we are going to  
12 have an independent review. These instruments have  
13 already been essentially selected and so it's part  
14 of the project's job to determine whether or not  
15 they're going to meet the schedule and meet the  
16 scientific objectives.

17 And that's going to be a step by step  
18 process. As soon as we have selected instruments  
19 from this evaluation process, then all of those  
20 instruments are all part of the payload and they'll  
21 basically -- will go on the scheduled reviews.

22 Essentially what we're doing ahead of

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1 time is just making sure that the contributed  
2 instruments are real.

3 Let me see, there was something else I  
4 wanted to say on this. More than likely, we get  
5 let's say nine months from now and we decide that  
6 one of the contributions is not going to make it,  
7 the odds are, unless we think it's pretty simple,  
8 the odds are we're not going to ask for an  
9 instrument because essentially both of these  
10 contributing instruments are not part of the  
11 science floor of the mission. And it's  
12 purposefully boxed off that way so that the mission  
13 does not depend upon the contributed instrument's  
14 success.

15 It would be nice to have. We  
16 appreciate the contribution. We would like to help  
17 them all we can to make sure that these are viable  
18 instruments that will get good data, that the U.S.  
19 participation is useful, but it's not the goal of  
20 the mission. So it essentially -- unless it's  
21 something pretty simple, we wouldn't ask, we  
22 wouldn't have another competition for whatever it

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1 is we'd lost from the contributed instruments.

2 Any other questions? Yes.

3 QUESTION: When are some of the key  
4 TBDs going to be filled in? In particular, data  
5 rates and in the amount of time we have every  
6 milliseconds to get data across, those type of  
7 issues that are lander memory allocations, things  
8 like that?

9 MR. MEYER: I will pass this on to the  
10 payload manager.

11 The question was when are some of the  
12 TBDs that are in the PIP going to be decided and  
13 because it may be critical in some of the  
14 instrumentation that could be proposed.

15 MR. SIMMONDS: So now I get to figure  
16 out how not to answer that.

17 There are a few TBDs. Some of those  
18 are there intentionally in that we want to hear  
19 what your requirements are and then we'll fill in  
20 around them.

21 The specifics of communications timing  
22 and so forth, I had thought those were already

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1 filled in to be honest with you.

2 Let me encourage you to submit that one  
3 by e-mail and let us go back and research it and if  
4 it's one that we have left out, and that I thought  
5 we had filled in, we'll get the answer back out and  
6 we should be able to do that fairly quickly.

7 If it's one where it's a range where  
8 I'm looking or we are looking for a set of  
9 accommodation requirements from you all, we'll tell  
10 you that too.

11 But I'm certainly not prepared right now to give  
12 you a numerical answer to that.

13 QUESTION: I have a question about the  
14 remote warm electronics box for the mass. Do you  
15 want to pass it over?

16 MR. MEYER: What is the question?

17 QUESTION: The question is are there  
18 any electronics that go in that box that aren't  
19 part of the competed package for the load sensor  
20 mass?

21 MR. MEYER: The question is whether or  
22 not there are electronics in the warm electronics

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1 box that aren't part of the competed instrument  
2 mass.

3 MR. SIMMONDS: Yes and no. He gave me  
4 an in, I had to take it.

5 The volumes and indeed the masses for  
6 those instrument elements that are in the AO and  
7 the PIP, particularly, are available for you to  
8 propose against. There may very well be  
9 electronics associated with engineering sensors in  
10 that volume, but it's volume outside of the volume  
11 allocated for you to propose against. In other  
12 words, your proposal in the case of a remote  
13 sensing suite, could propose to use the entire  
14 volume as described in the PIP for that function.

15 We may very well have other things in  
16 it, but it doesn't count against the allocation.  
17 Clear enough?

18 QUESTION: The standard is available?

19 MR. MEYER: Yes, there may be other  
20 things there, but no, it wouldn't count against and  
21 it would be added on to the volume if we chose to  
22 put something else in there.

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1                   QUESTION:       A question about the  
2 accommodation assessment as part of the review  
3 process.     Are instruments going to be judged  
4 against the resources that are specified in the PIP  
5 or some evolved resources?   I know there are on-  
6 going trades of the Rovers, so I was wondering what  
7 are the rules for that?

8                   MR. MEYER:     We are basically -- we  
9 fixed the payload volume and mass and so the  
10 accommodation will be against that.   If something  
11 happens, we'd have to be realistic, but essentially  
12 we don't expect this to change in the near future  
13 so that how we're going to fit the instruments  
14 together is based on what the specifications are  
15 given.

16                   Yes?

17                   QUESTION:   Is the end of arm tooling  
18 available for subcontract provided in one of the  
19 investigations or is that something that is MSL?

20                   MR. MEYER:   I didn't hear the first  
21 part of your question.

22                   QUESTION:     The end of arm tooling,

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1 would that be proposed to support a science  
2 investigation, one of the tools that you've  
3 mentioned is a greater core, things like that, or  
4 is that provided by JPL or --

5 MR. MEYER: The question is whether or  
6 not the end of arm tooling or whatever the  
7 capability is at the end of arm, is that available  
8 for a science investigation?

9 What is going to be done is that the  
10 RFP will be put out requesting industry, not  
11 necessarily industry, but ideas for what the  
12 effector part of the arm would be, so --

13 MR. SIMMONDS: Specifically the AO is  
14 not soliciting those elements. There is, in fact,  
15 as Michael said, there's a core abrader scoop  
16 functionality, in fact, potentially the arm itself  
17 may indeed be contracted for by the project. It's  
18 not being solicited by this particular opportunity.

19 There will be, in fact, an RFI coming out fairly  
20 soon talking about core abrader technology and  
21 looking for industry inputs from the project out to  
22 the broader community, just as a part of that

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1 process. But that is a separate process than the  
2 science investigation solicitation that's being  
3 talked about today.

4 As far as what you might put into your  
5 proposals, that's largely up to you, but the  
6 solicitation definition is as defined in the AO.

7 QUESTION: To follow on to that last  
8 question, so the science proposal could propose  
9 under the assumption that a particular type of  
10 sample in a particular form is available without  
11 necessarily specifying how it's going to become  
12 available?

13 MR. MEYER: I would say that is largely  
14 correct. I think there's a realm where it would be  
15 unrealistic if you needed an inch diameter core as  
16 an example. But I think we have a reasonable idea  
17 of what the potential sampling gathering devices  
18 are and I think proposing something like that being  
19 available. Certainly the more adaptable your  
20 instrument is to whatever sample is given it, the  
21 better off your proposal is in terms of whether or  
22 not it can be accommodated, although I'm not sure

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1 we'll decide exactly how we get the sample until we  
2 know what instruments we're using.

3 MR. SIMMONDS: The PIP defines a  
4 baseline set of samples, sample characteristics  
5 that we intend to make available to the  
6 instruments. Having said that, if your instrument  
7 requires a different sample, you should include  
8 that requirement in your proposal and it's going to  
9 be evaluated against the baseline set of samples  
10 that we intend to provide and plan to or as what's  
11 described as an instrument unique accommodation  
12 requirement.

13 Those instrument unique accommodation  
14 requirements, and this is common to a remote  
15 sensing instrument that requires an order of  
16 magnitude, finer pointing and control than what we  
17 described the mast is capable of doing, for  
18 example, just to get something that's very  
19 different. But it's a unique requirement from that  
20 particular investigation that in order to do the  
21 science proposed would be required of the vehicle.  
22 It's outside of our current baseline and hence

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1 would require us to do work that we wouldn't  
2 otherwise do. The cost and complexity associated  
3 with doing that additional work will be book kept,  
4 in essence, against the instrument in the final  
5 selection recommendations that are put forward by  
6 Michael to the Steering Committee and to the rest  
7 of the process.

8 So we don't close the door on  
9 instrument unique requirements, but we do advise  
10 you and in essence, group it with the cost of that  
11 investigation to say that if a particular  
12 investigation needs something special, we can work  
13 to provide it, assuming it's technically feasible.

14 But the overall costs of the investigation are  
15 going to be the total of the proposed cost that you  
16 provide as well as what it costs us to accommodate  
17 it outside of the baseline we've described in the  
18 solicitation.

19 QUESTION: I have a question regarding  
20 schedule. In the PIP, in 5.1 it's called out for  
21 over surface operation field test at JPL and what  
22 is the expected hardware to be delivered to this

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1 test two to three years prior to launch?

2 MR. SIMMONDS: The question was early  
3 testing of science-related hardware on basically in  
4 our surface test bed activity, there is a  
5 description of that, some description of that in  
6 the final PIP, if you've read that. If that is not  
7 adequate, please re-ask that question via e-mail  
8 and we'll try to be more specific in terms of the  
9 timing.

10 I know we're not very specific on  
11 timing yet. It's in the quarter that we anticipate  
12 doing it in, that is part of the finalized plans  
13 that we're still working on, so we don't have hard  
14 dates.

15 As far as the fidelity of hardware  
16 that's required, that's something I'll have to go  
17 back and check on versus the time. I honestly just  
18 don't remember, but if you would submit that one  
19 via e-mail, we'll be able to go back and answer. I  
20 apologize, I don't have those details.

21 QUESTION: There's another table about  
22 the hardware delivery and it's mentioned what kind

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1 of hardware.

2 MR. SIMMONDS: Re-ask that one and let  
3 us work on it, thanks.

4 QUESTION: In the AO, Appendix A, page  
5 1 of Appendix A, there's a highlighted area, Notice  
6 to All Offerors, JPL will award subcontracts to all  
7 non-government participants including co-  
8 investigators. I'm not quite sure how to interpret  
9 that. Help us understand whether -- and how would  
10 you handle that contractually?

11 MR. MEYER: That is how all the money  
12 flows is through contracts.

13 If you're the PI, you're on contract to  
14 JPL for building and delivering your instrument on  
15 time, etcetera.

16 The question was the AO says that the  
17 PI and Co-Is, non-government institutions, would be  
18 put on contract by JPL and essentially that's how  
19 money gets to the investigation is through  
20 contracts and JPL manages the contract. That's how  
21 -- they're the manager of the mission.

22 QUESTION: Hardware also?

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1                   MR. MEYER:   Hopefully you're building  
2 an instrument for your investigation.

3                   QUESTION:    I mean is that separate,  
4 does JPL handle all the contractuals, the subtract  
5 to our hardware vendors and Co-Is?

6                   QUESTION:    I think if you have a  
7 government PI and then you have subcontracts to Co-  
8 Is which are non-government, do the contracts flow  
9 from JPL directly to the Co-Is, therefore you need  
10 all contractual information or does the PI at the  
11 government agency handle all the subcontracts?

12                  MR. MEYER:   I think I understood your  
13 question, but let me try it.

14                  The question -- I believe the question  
15 was subcontracts from the PI to their  
16 subcontractors, whether they're handled by JPL or  
17 by the PI. There's a master contract from JPL to  
18 the PI in the case of a non-government PI. Your  
19 subcontracts are your subcontracts. You administer  
20 those separately.

21                  Now Wayne, help me a little bit in  
22 terms of required or requested information about

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1 those subcontracts that's requested in the  
2 proposals, but the -- hello?

3 QUESTION: Have you clarified the rule  
4 or have you essentially resolved his claim to get a  
5 skew of that form of -- in which you want to  
6 initiate the projects as quickly as possible,  
7 therefore I think you're requiring some contractual  
8 information of the subcontracts so that you can  
9 initiate the contracts quickly even if it is a  
10 government PI. We'll submit the question in  
11 writing, and you can clarify it later.

12 MR. SIMMONDS: Please do, but basically  
13 even for that four month period, we need to know  
14 something about your subcontracts so we can include  
15 those as significant procurements in the contract  
16 that we issue you.

17 But there's the other side of the coin  
18 where we have government PIs. Those funds, as  
19 opposed to coming through as a contract from JPL,  
20 are bypassed from NASA Headquarters. And there  
21 too, there needs to be information about how you're  
22 going to spend the money. And that gets into the

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1       vagaries       of       government       versus       contract  
2       relationships with us at the project where in the  
3       case of a government PI at DOE lab or a NASA  
4       center, the money goes directly from NASA  
5       headquarters out to you and then we're involved, in  
6       essence, in a monitoring and management function  
7       for NASA Headquarters, but we don't pass the money  
8       through JPL.

9               MR. RICHIE: Let me just say let's get  
10      the question in and make sure we've answered the  
11      question asked. I would point out that Appendix A  
12      is mostly about where the legal and procurement  
13      requirements are at, not about the specific  
14      implementation. Appendix B is where we've asked  
15      for the data that we need to evaluate and the data  
16      we need to contract with. So just look at Appendix  
17      A as being the requirements from legal and  
18      Procurement on the overall process and what NASA  
19      will and won't do and so forth and so on.

20             And do submit your questions  
21      specifically. We'll make sure we answer it.

22             QUESTION: It says in the AO that

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1 things could change about the arm/arms and that  
2 you're going to be responsive to what is proposed.

3 My question is is there anything else about the  
4 Rover that could change in either response to what  
5 is proposed or in response to discoveries made by  
6 the Mars Exploration Rovers?

7 MR. MEYER: The question was mentioned  
8 in the AO that, for instance, the arms could change  
9 depending upon what instrumentation is available,  
10 etcetera. And the question is are there other  
11 things that might change depending upon what  
12 happens.

13 Yes, the answer is yes. This is what  
14 we really think the Rover will be capable of  
15 supporting in terms of instrumentation now. And we  
16 don't have a budget for 2005. Yes, things can  
17 change and you, as a wise proposer, may want to  
18 consider sort of what are potential options. But  
19 essentially, this is our best intention and you  
20 should be competing to what we think the resources  
21 are available.

22 QUESTION: In some recent AOs there's

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1       been a required minimum reserve for Phase C/D. Is  
2       there any such requirement or preference or  
3       percentage of reserves?

4               MR. MEYER: The question is whether or  
5       not there is a requirement for a certain percentage  
6       of the reserves. Not in the AO. It's up to you to  
7       be a wise proposer.

8               QUESTION: And my second question has  
9       to do with the JPL contract. The first is for four  
10      months start up. At the end of that four months or  
11      just prior to, assuming we're selected and on time,  
12      will be asked for another detailed proposal for the  
13      remainder Phase A/B and the remainder of the other  
14      phases?

15              MR. MEYER: The question is the way  
16      it's written in the AO, a contract will be issued  
17      right away for approximately four months, so what  
18      happens after that?

19              I think I know the answer.

20              MR. SIMMONDS: The initial contract is  
21      so that we can get money to you quickly over a  
22      limited scope of work. Your proposal to the AO is

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1 your proposal for the overall job. And during that  
2 four months we will be working with you to  
3 definitize the overall long term contract in  
4 parallel. So the answer to your question is no,  
5 there will not be a separate cost proposal required  
6 of you at the end of that four month period, but  
7 rather during that four month period, we will be  
8 working together to negotiate and definitize the  
9 long term contract that you'll use to design and  
10 implement your investigation over the course of the  
11 project.

12 QUESTION: And that will go all the way  
13 through the end of Phase E or will it only go up  
14 through confirmation review?

15 MR. SIMMONDS: It will go all the way  
16 through Phase E, but confirmation represents a  
17 decision point as to whether we continue or not.  
18 There will only be one contract.

19 MR. MEYER: Let me in all fairness,  
20 there's a question on the telecon?

21 QUESTION: Is it possible to get the  
22 CAD drawings for the Rover outline?

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1           MR. MEYER: The question was can we get  
2 the CAD drawings for the Rover outline? No. The  
3 buying allocations are in the AO. Was there more  
4 to that question?

5           QUESTION: It would be very convenient  
6 to go, to find our fields of view and the  
7 combination issues used in the actual outline  
8 drawings.

9           MR. MEYER: Essentially, the consensus  
10 is that you specify what fields of view that you  
11 need or want.

12           I suspect the Rover isn't so tightly  
13 defined that a particular view would be denied.

14           QUESTION: It's a good baseline to  
15 start with and so it would have been a nice start  
16 using the existing outline design.

17           MR. SIMMONDS: Let me suggest that for  
18 your investigation area, if you define the  
19 accommodation characteristics that you're  
20 interested in, in terms of allowable fields of  
21 view, express those to us in a question in an e-  
22 mail, let us respond. If we have gotten any -- if

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1 we have definition in that area, we'll provide it.

2 In a lot of these areas, we have not defined the  
3 configuration in detail, so as Michael said, we'll  
4 take your requirements and they basically become a  
5 shaping input to the final designs after selection.

6 MR. MEYER: I think he may just want  
7 the drawings so he doesn't have to draw it.

8 QUESTION: It is a communication issue.

9 MR. MEYER: I think he just wants  
10 something so he can have something to start with so  
11 he can plaster his instrument on the side and not  
12 have to draw the Rover himself.

13 MR. SIMMONDS: There may be some simple  
14 CAD files that we can put out there. That's  
15 something I've got to go back and check with and  
16 see what is available on the project. But that's  
17 one we'll take.

18 QUESTION: Put it on there and see what  
19 it looks like. So just a simple outline drawing  
20 would be just great.

21 MR. MEYER: We will look and see if JPL  
22 has some reasonable simplified drawings that the

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1 community can use to -- as their template for  
2 whatever instruments they want to stick on.

3 QUESTION: That would be really great.

4 Thanks a lot.

5 QUESTION: What do you think the  
6 probability is that the final Rover configuration  
7 will be using the RTG power supplies?

8 MR. MEYER: Essentially, we think the  
9 probability is high, but we have to carry a solar  
10 option because that's part of the whole NEPA  
11 process and the -- I think that decision actually,  
12 though, isn't until after proposals are in. So we  
13 have to carry it as an option.

14 QUESTION: I was wondering if you could  
15 comment on the availability of Rover materials and  
16 distributions, their compositions and  
17 distributions?

18 MR. MEYER: The question was whether or  
19 not there could be some comment on the Rover  
20 materials themselves.

21 QUESTION: And distribution across the  
22 Rover, through the Rover.

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1           MR. SIMMONDS: I'm not going to repeat  
2           that. Ask the question specifically via an e-mail  
3           in terms of what you're concerned with and we'll  
4           try to let you know what's likely. There is some  
5           guidance in terms of overall materials and  
6           processes in the AO and PIP materials. We clearly  
7           have as one of the eventual constraints on the  
8           mission hardware and the instrument hardware  
9           control of organic contamination since it's one of  
10          the things that we're -- since organics are one of  
11          the prime sets of material that we're trying to  
12          measure. They will be controlled and limited, both  
13          on our side and on yours. The final definition of  
14          those limits is largely going to depend on the  
15          measurement sensitivities and the goals of the  
16          investigations. So it's an interactive process.

17                 Going in, know that we are sensitive to  
18                 it, both in terms of enabling your investigations  
19                 and on  
20                 -- as far as requirements on you. As far as a  
21                 specific materials list, no, that does not exist  
22                 today.

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1           QUESTION: Does that move over after,  
2 materials and composition for modeling --

3           MR. SIMMONDS: Nothing exists other  
4 than very general stuff today. If there are  
5 specifics that you're trying to say does this --  
6 can this be avoided, can we say that there will be  
7 no carbon tet in the spacecraft, try that.

8           QUESTION: No, we're interested in any  
9 possibility influence on what we're trying to --

10          MR. SIMMONDS: I understand. If you've  
11 got specific things like that, go ahead and ask  
12 them and we'll try to answer, but in general, we're  
13 going to be careful of organics and things like  
14 that. There is on the website, a specific report  
15 and in the PIP from the Organic Contamination  
16 Science Steering group that was chartered and  
17 conducted under Jim's charter and led by the  
18 community to look at the predicted tolerance of  
19 organic materials, likely measurements to be  
20 undertaken as a way of -- guessing is too weak a  
21 word, but predicting in a broad sense what the  
22 sensitivities are going to be on both to and for

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1 organic contamination on the spacecraft.

2 And we've tried to incorporate that  
3 into our thinking, but clearly, this is an area  
4 where the selected investigations will drive the  
5 final result and it will wrap back around into cost  
6 for mission of what can we afford to do versus what  
7 we'd like to do. That and planetary protection are  
8 all a very -- a set of very interactive processes.

9 QUESTION: How about possibly a  
10 refinement of the mass estimates which I think are  
11 between 500 and 1,000 kilograms. Is there possible  
12 refinement that we can anticipate?

13 MR. SIMMONDS: Not at this point. I'm  
14 not sure that it's relevant to the investigation  
15 proposals in that we have given you a mass  
16 allocation that you can propose against and we'll  
17 carry that mass allocation.

18 QUESTION: If we could have a rough  
19 estimate of that, but it doesn't sound like that's  
20 available.

21 MR. SIMMONDS: Not really available.

22 MR. MEYER: I think the real problem is

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1 the Rover right now is constructed out of paper and  
2 ink.

3 QUESTION: For a suite proposal from  
4 the government organization where the limit might -  
5 - the overall suite might be over the threshold for  
6 earned value tracking, do you want to see those  
7 trackings?

8 MR. MEYER: I don't know what earned  
9 value tracking is. Wayne?

10 (Laughter.)

11 I'm sure it's a problem, but I have no  
12 idea what it is.

13 MR. RICHIE: You only give me the hard  
14 questions. Yes, NASA is in this business  
15 management earned value period of time and if  
16 you're telling me there is a regulated value, then  
17 it would probably require it. Let me do some  
18 research on that though and put an FAQ on the  
19 website.

20 MR. MEYER: Are there any more  
21 questions from the group teleconning in?

22 QUESTION: I have another question. In

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1 past programs that I participated in that JPL was  
2 the prime with regard to contracts, there was a tax  
3 that the contract was subject to, whereas the  
4 allocation directly to field center was not subject  
5 to the same tax. How will that cost differential  
6 be taken into account in the evaluation?

7 MR. MEYER: I will pass on it on to my  
8 JPL colleague here.

9 MR. RICHIE: I think he's talking about  
10 a full cost accounting.

11 MR. SIMMONDS: The funding allocations  
12 in the AO and PIP are totals and do not -- are  
13 totals in terms of contract value. They would be  
14 the amount of money that went out to the PI  
15 contracts or to a government PI via bypass funding.  
16 They don't include any of the JPL burdens that get  
17 included over the top of subcontracts issued by  
18 JPL.

19 So yes, if in the limit, NASA were to  
20 select all of the investigations from government  
21 entities, the total cost to the mission would be  
22 less by the amount that would otherwise be imposed

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1 as JPL burdens. But it is not part of the  
2 selection process, nor is it a criteria for  
3 selection. It is being separately book kept by the  
4 project in terms of the burden cost to administer  
5 these contracts or if they don't happen, it's --  
6 you save a few million bucks that probably gets  
7 spent somewhere else.

8 MR. MEYER: Any other questions?

9 QUESTION: A completely different  
10 question. Foreign nationals who do not yet have a  
11 green card who are working at U.S. institutions, is  
12 that a category of person that needs to be  
13 addressed in the international partnership section?

14 MR. MEYER: The question is foreign  
15 nationals who don't have a green card working at a  
16 U.S. institution, whether or not that's part of the  
17 foreign national collaboration section.

18 I think if the money is going to the  
19 U.S. institution, then it doesn't represent a  
20 foreign collaboration, but if that person is just  
21 going to be there temporarily and then move to a  
22 different country, if they're going to go back

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1 home, I think it then has to be addressed.

2 MR. RICHIE: We have had similar  
3 questions like this before. One is the money going  
4 to the institution cannot be used to fund those, if  
5 you understand that.

6 MR. MEYER: Say that again.

7 MR. RICHIE: Okay, I was just providing  
8 a clarification that this -- we've had similar  
9 situations. You cannot take funding to a domestic  
10 institution and fund a foreign national. All  
11 foreign nationals must be on a quid pro quo basis.

12 MR. MEYER: I don't think that is  
13 correct. If they're at the institution and the  
14 institution can pay them, otherwise we'd get rid of  
15 all of our graduate students.

16 We'll refer this to Frequently Asked  
17 Questions because we don't want to get in a bind on  
18 this, but usually if the money goes to a U.S.  
19 institution, they can pay for somebody working  
20 there at the U.S. institution.

21 Obviously, we don't know and we'll get  
22 the

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1 -- do you have that question down, Wayne?

2 Let's have that submitted so we get the  
3 situation addressed.

4 Was there a question on the telecon?

5 QUESTION: I was just going to comment  
6 that I think this is a very important question to  
7 resolve quickly because a number of us do have  
8 foreign nationals working on our efforts in one way  
9 or another, either through universities or directly  
10 at the institution proposing.

11 MR. MEYER: Yeah, I agree and we will  
12 resolve this. Any other questions?

13 QUESTION: For the foreign nations  
14 providing or proposing to provide instruments,  
15 first of all, in one of the charts that has been  
16 distributed today said that there will be  
17 opportunity for U.S. to be involved in these  
18 instruments through competition afterwards. Does  
19 that mean that you preclude having U.S. Co-Is on  
20 these instruments right away?

21 MR. MEYER: No, we aren't precluding  
22 U.S. Co-Is on the instruments right away because

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1 it's whatever the PI has arranged for doing their  
2 instrument. I mean they're already part of the  
3 instrument team, they know that.

4 QUESTION: Would you require in that  
5 case to also review the cost that you are proposing  
6 to our national agencies that support us or don't  
7 you?

8 MR. MEYER: Could you repeat the  
9 question?

10 QUESTION: In the proposal, we have a  
11 cost part, right? The question is the cost is to  
12 be supported by NASA in that case by our national  
13 agency here. Do you require to have the cost  
14 evaluation also evaluated by you or don't you care  
15 about the cost evaluation?

16 MR. MEYER: With foreign contributed  
17 instruments, I mean ones that are being proposed,  
18 they have to have the cost information there so we  
19 can understand whether or not they're realistic  
20 proposals and it doesn't have much to do with  
21 whether or not we thought we could afford it  
22 because it's on a no cost basis.

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1 Does that answer your question?

2 QUESTION: I'm not sure I understood.  
3 So you need to have the cost evaluation in the  
4 proposal, even for the foreign contribution?

5 MR. MEYER: Yes, even for foreign  
6 contributions. It states that in the AO.

7 QUESTION: It's complicated by the fact  
8 that the cost evaluation in non-U.S. countries is  
9 very different. For example, the salaries are not  
10 as good there and so I don't know how you will  
11 manage to evaluate the cost in that case.

12 MR. MEYER: We will be able to manage  
13 it much better than if there is no cost  
14 information.

15 QUESTION: I'm sorry, I didn't get you  
16 on that.

17 MR. MEYER: We can manage it much  
18 better than if there is no cost information.

19 QUESTION: Okay, so in other words you  
20 are requiring the cost evaluation to be part of the  
21 proposal, right?

22 MR. MEYER: Yes.

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1           QUESTION:    The Letter of Intent that  
2   you are supposed to send in 10 days from now, you  
3   said that the entire list of the Co-Is has to be  
4   there.  Is this a requirement or request or can we  
5   add them later?

6           MR. MEYER:   You can add Co-Is later  
7   because the Notices of Intent are basically intent.  
8   They're not contracts, they're not binding.

9           QUESTION:    So we need to have a Letter  
10  of Intent sent by May 14th in order to submit a  
11  proposal, don't we?

12          MR. MEYER:    Notices of Intent are  
13  strongly encouraged, but not required.

14          QUESTION:    Thank you.

15          MR. MEYER:    Any other questions?  Well,  
16  I think that's it.  I appreciate the time and  
17  effort that you've gone through to come here and I  
18  hope this has been helpful and certainly if you  
19  have any ideas of how this can be more helpful,  
20  please let us know.  And we've tried to keep track  
21  of the questions.  Those people that we have been  
22  unable to answer the questions, please send those

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1 in so that we don't forget and thank you very much.

2 (Whereupon, at 11:50 a.m., the  
3 preproposal conference was concluded.)  
4  
5  
6  
7  
8  
9  
10  
11  
12

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